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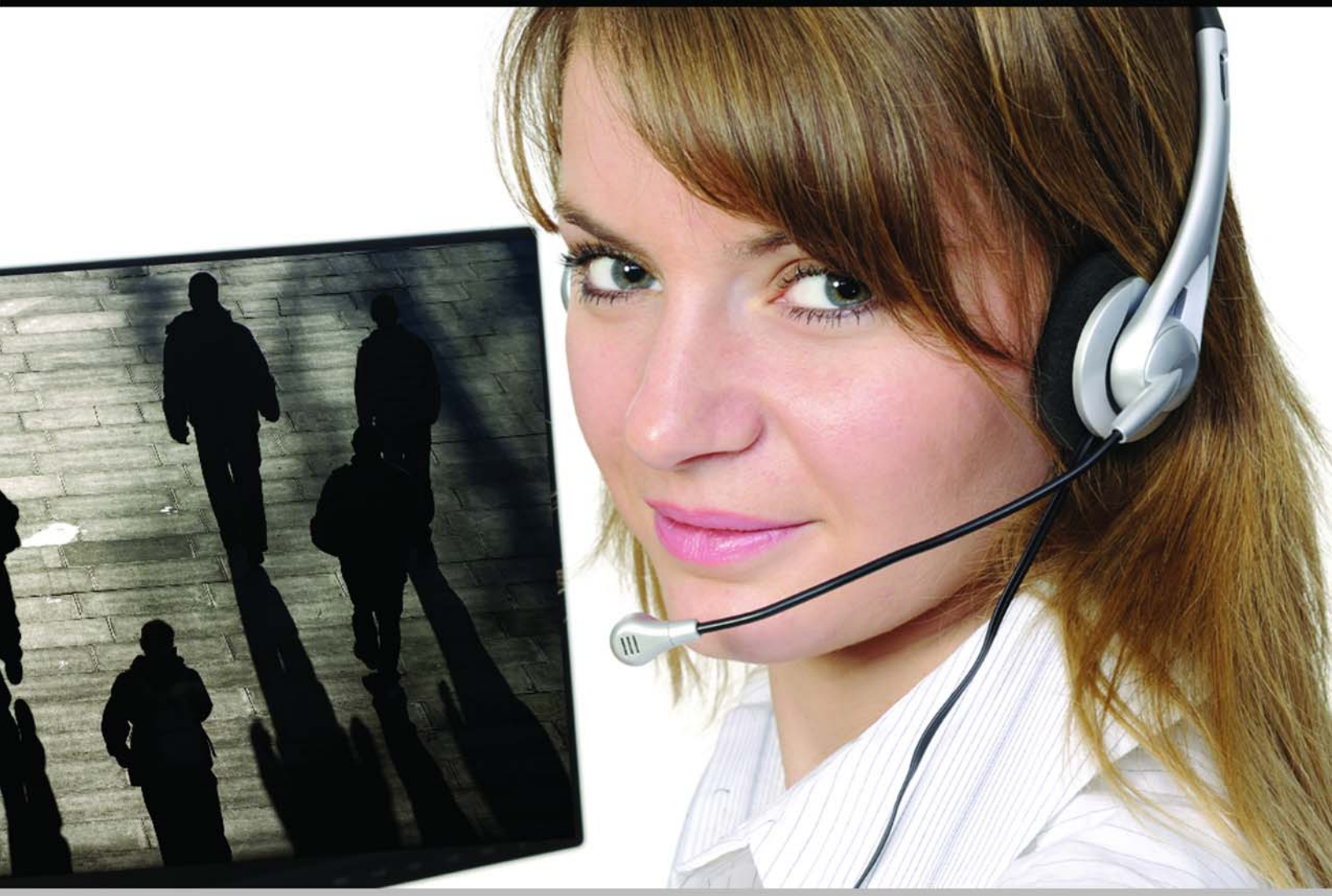

FormsDesigner User Guide

B.A.S.I.S. ET693™

STANLEY®
Security Solutions

PROTECTING WHAT'S IMPORTANT TO YOU™

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Chapter 1: Introduction

FormsDesigner Overview

FormsDesigner allows you to customize the cardholder, asset, reader, visit, and/or visitor forms as desired by modifying any standard field. FormsDesigner also allows you to add custom fields in addition to any standard fields on pages. Both the labels and the properties can be changed for user defined fields. A minimum of sixteen pages are supported to design cardholder screens with standard and custom fields.

Note: Throughout the FormsDesigner documentation, the term *access control system* is used to represent the B.A.S.I.S.® software and hardware collectively, whereas the terms *access control software* and *access control applications* refer to only the B.A.S.I.S. software.

FormsDesigner also includes the DataExchange features, which can be used to import into and export from the database. For more information, refer to Overview of DataExchange on page 81.

Conventions Used in this Documentation

The text in this manual is formatted to make it easy for you to identify what is being described.

- Where a term is defined, the word is represented in *italics*.
- Field names, menus and menu choices are shown in **bold**.
- Keyboard keys are represented in angle brackets. For example: <Tab>, <Ctrl>.
- Keyboard key combinations are written in two ways:

  <Ctrl> + <Z> means hold down the first key and press the second.

  <Alt>, <C> means press the first key, then press the second.
- Window buttons are represented in square brackets; for example: [OK], [Cancel].

Getting Started

Passwords

B.A.S.I.S.® includes strong password enforcement, which checks the user's password against password standards. This functionality is designed to enhance password security if single sign-on is not used. If single sign-on is used (automatic or manual), B.A.S.I.S. does not enforce password standards. For more information on single sign-on, refer to Single Sign-On on page 15.

The system's strong password enforcement also checks the Stanley database user's password when logging into applications. Database user passwords apply only to SQL databases. For information on changing your database password, refer to the Accounts and Passwords chapter in the Installation Guide.

Password Standards

When creating a strong password keep the following guidelines in mind:

- Passwords cannot be blank.
- Passwords cannot be the same as the user name (e.g. SA, SA).
- Passwords cannot be Stanley keywords.
- Although not required, your password should contain numbers, letters, and symbols. Spaces are also acceptable. (e.g. August 18, 2002).
- B.A.S.I.S. user passwords are *not* case-sensitive.
- Database passwords conform to the rules of the specific database being used; passwords in SQL Server are case sensitive.
- The maximum value for a strong password is 127 characters. The minimum value is 1.

Enable/Disable Strong Password Enforcement

Strong password enforcement is enabled/disabled in System Administration or ID CredentialCenter. When you install B.A.S.I.S., by default strong password enforcement is enabled. When you upgrade, by default strong password enforcement is disabled. To manually enable or disable strong password enforcement:

1. Select **System Options** from the **Administration** menu in System Administration or ID CredentialCenter.
2. Select the General System Options tab.
3. Click [Modify].
4. Select or deselect the **Enforce strong passwords** checkbox.

Note: If you disable the option to enforce strong passwords, you will continue to receive a message stating your password is weak every time you log into an application until you change your B.A.S.I.S. password to meet the password standards.

5. Click [OK].

Error Messages

Read weak password messages/warnings carefully to avoid confusion about whether your user password or database password is weak.

If you have a weak database password you will receive a warning every time you log into any application, until you change your database password. Although it is not recommended, you can acknowledge the warning and continue working in the application. This table describes the password-related error messages that may be generated and which password you need to correct.

- To correct the database password, refer to the Accounts and Passwords chapter in the Installation Guide.
- To correct the user password, select a password that meets the standards specified in Password Standards on page 12.

Warning message	Password to correct
Database password violations: Your password is a keyword that is not allowed. It is highly recommended that you change your password to meet our minimum password standards.	Database
Your password cannot be blank. Please enter a password.	User
User password violations: Passwords cannot be the same as the user name.	User
Your password is a keyword that is not allowed.	User

Accounts

Anyone who wishes to use B.A.S.I.S. applications must enter a user name and password in order to access the software. The System Administrator should create a unique account for each user of the applications. The System Administrator can also, for each user, create a list of *permissions*, which specifies precisely which screens, fields, and buttons the user can access.

During initial installation of the application, default accounts are created. These include:

User name	Password	Type
sa	sa	system account
admin		sample
user		sample
badge		sample

These are provided as samples. You may change the passwords and use the accounts, or remove them. The exception to this is the system account, SA. By definition this account has permission to do anything in the system. A user with system access has unlimited access to the application. You cannot delete or

change the system account except to modify the password, which you are strongly encouraged to do as soon as possible to discourage unauthorized use.

The first time you log into B.A.S.I.S. to configure the application, you should log in as **SA** and your password should be **SA**.

Log In

This procedure describes how to log in without using single sign-on. For a description of single sign-on, refer to Single Sign-On on page 15. To log in using single sign-on, refer to Configure Single Sign-On on page 17.

Note: To log into FormsDesigner on a segmented system, you must be an <All Segments> user.

---

1. Click the Start button, select **Programs** > **B.A.S.I.S. ET693**, and then select the desired application.
2. Your system may be configured to prompt you to select a database to log into. If it is not, proceed to the next step. If it is:
   a. In the **Database** drop-down, all ODBC system databases currently defined on your computer are listed. Select the database that you wish to use for your application.
   b. Click [OK].
3. The Log On window displays.
   a. In the **User name** field, type the user name assigned to you. When logging in for the first time, your user name is **SA**.
   b. In the **Password** field, type the password assigned to you. When logging in for the first time, your password is **SA**. Note that the characters you type do not appear in the field. Instead, for each character you type, an "*" displays. This is intended to protect against unauthorized access in the event that someone else can see the screen while you type.

Important: After logging in for the first time, you are strongly encouraged to modify the password for the system account as soon as possible to discourage unauthorized use.

---

   c. In the **Directory** field, select the directory that you wish to log into. For user accounts not using single sign-on, the default is "<Internal>."
   d. Select the **Remember user name and directory** checkbox if you want the values you just entered in the **User name** and **Directory** fields to automatically be selected the next time that you log in.
   e. Click [OK].
4. Your system may be configured to prompt you to confirm that you are authorized to use the application. To accept the terms of the authorization warning click [Yes].

5. A warning message will be displayed that reminds you of the importance of **PERFORMING BACKUPS ON A REGULAR BASIS**. By default, the [No, I do not have an up-to-date backup of my database] radio button is selected. If you have not done a backup that includes all of the changes you have made to date, you will need to close FormsDesigner, perform a database backup, then start the application again.

Note: If your most recent database backup reflects all changes you have made to date, select the [Yes, I have an up-to-date backup of my database] radio button. If you select this, the [OK] button will be enabled. Click the [OK] button.

6. If you only have permissions to access and edit one form, then the currently saved layout definition of that form is loaded into the main window. If you have permissions to access and edit more than one form, the Open Form window will be displayed. Select the type of form you want to design, click the [OK] button, and the currently saved layout definition of that form is then loaded into the main window.
7. If segmentation is not enabled, skip this step. If segmentation is enabled:
   a. The Select Segment window opens. Select the segment you wish to log into.
   b. Click [OK].

Single Sign-On

Single sign-on simply means logging into B.A.S.I.S. with the same user name and password that you use to log into Windows or logging into B.A.S.I.S. using an LDAP user name and password for authentication. *LDAP* (Lightweight Directory Access Protocol) is a software protocol that enables you to locate businesses, people, files, and devices without knowing the domain name (network address).

Single sign-on allows scripts using the DataConduIT API to authenticate. These scripts will be run under a Windows account. The account that is making the call to the API can be obtained easily this way, and the script can be restricted to those actions that the user is permitted to perform (using standard B.A.S.I.S. permissions).

Note: The use of the explicit username and password for directory authentication to Windows is strongly discouraged. It is recommended that you do not store Windows passwords in the B.A.S.I.S. system, since B.A.S.I.S. uses reversible encryption and Windows does not. If explicit authentication is required, you should use an account that has view only permission to the directory in question.

It is possible to assign both an internal account and one or more directory accounts to a single user. Assigning both types of accounts increases the flexibility of the system during the authentication process. If the directory service is down or cannot be found from the workstation where the user is logging on, that user can instead use the internal account. Using both types of accounts means that you need to manage the internal account user names and passwords in addition to managing the directory accounts.

Important: Allowing a user to log on in multiple ways increases the probability that the user's access to the system could be compromised. It is recommended that you standardize on either internal or directory accounts, but not both.

There are cases where assigning both an internal account and a directory account to a user may make sense. In a system where directory accounts are predominantly used, you may also assign an internal account to a user who needs to access the system from locations where the directory service is unavailable. If internal accounts are predominantly used, you may want to assign a directory account to a user so that the user does not need to enter in a password to log on.

Directory Accounts

To log into B.A.S.I.S. using single sign-on, a user name, password, and directory are required. A *directory* is a database of network resources, such as printers, software applications, databases, and users. The following directories are supported by B.A.S.I.S.: Microsoft Active Directory, Microsoft Windows NT 4 Domain, Microsoft Windows Local Accounts, and LDAP.

Automatic and Manual Single Sign-On

When a user account is configured for single sign-on, the user can log into B.A.S.I.S. automatically or manually.

For example, with automatic single sign-on, users simply start B.A.S.I.S. and they are automatically logged in under their Windows account and directory.

With manual single sign-on, users must manually enter their Windows or LDAP account information (user name and password). Users also have the option of selecting a different configured directory.

If single sign-on is not used, users manually enter a user name and a password that is different from their Windows or LDAP password. The directory is hard-coded to refer to the internal B.A.S.I.S. user directory.

Notes: *Manual* single sign-on can be used with the following directories: Microsoft Active Directory, Microsoft Windows NT 4 Domain, and LDAP.

Automatic single sign-on can be used with every directory supported by B.A.S.I.S. *except* LDAP because it doesn't provide all the account information required.

Configure Single Sign-On

By default, user accounts do **not** use sign-on. To configure single sign-on the System Administrator must add a directory and link a user account to the directory.

Notes: For more information, refer to "Add a Directory" in the Directories folder chapter of the System Administration or ID CredentialCenter User Guide.

For more information, refer to "Link a User Account to a Directory Account" in the Users folder chapter of the System Administration or ID CredentialCenter User Guide.

Log In Using Automatic Single Sign-On

Automatic single sign-on is supported with Windows domain accounts.

Note: To log into FormsDesigner on a segmented system you must be an <All Segments> user.

1. Click the Start button, select **Programs** > **B.A.S.I.S. ET693**, and then select the desired application.
2. Your system may be configured to prompt you to select a database to log into. If it is not, proceed to step 3. If it is:
   a. In the **Database** drop-down, all ODBC system databases currently defined on your computer are listed. Select the database that you wish to use for your application.
   b. Click [OK].
3. If your Windows account is linked to a user, a message will be displayed that says, "Attempting to automatically log you on using your Windows account. To bypass this, hold down SHIFT." To automatically be logged in, do nothing.
4. Your system may be configured to prompt you to confirm that you are authorized to use the application. To accept the terms of the authorization warning, click [Yes].
5. A warning message will be displayed that reminds you of the importance of **PERFORMING BACKUPS ON A REGULAR BASIS**. By default, the

[No, I do not have an up-to-date backup of my database] radio button is selected. If you have not done a backup that includes all of the changes you have made to date, you will need to close FormsDesigner, perform a database backup, then start the application again.

Note: If your most recent database backup reflects all changes you have made to date, select the [Yes, I have an up-to-date backup of my database] radio button. If you select this, the [OK] button will be enabled. Click the [OK] button.

---

6. If you only have permissions to access and edit one form, then the currently saved layout definition of that form is loaded into the main window. If you have permissions to access and edit more than one form, the Open Form window will be displayed. Select the type of form you want to design, click the [OK] button, and the currently saved layout definition of that form is then loaded into the main window.
7. If segmentation is not enabled, skip this step. If segmentation is enabled:
   a. The Select Segment window opens. Select the segment you wish to log into.
   b. Click [OK].

Log In Using Manual Single Sign-On

Both users who want to log into B.A.S.I.S. using an LDAP user name and password for authentication and users who want to log in using a Windows domain account can do so using manual single sign-on.

Note: To log into FormsDesigner on a segmented system, you must be an <All Segments> user.

---

1. Click the Start button, then select **Programs** > **B.A.S.I.S. ET693**, and then select the desired application.
2. Your system may be configured to prompt you to select a database to log into. If it is not, proceed to step 3. If it is:
   a. In the **Database** drop-down, all ODBC system databases currently defined on your computer are listed. Select the database that you wish to use for your application.
   b. Click [OK].
3. If your Windows account is linked to a user, a message will be displayed that says, “Attempting to automatically log you on using your Windows account. To bypass this, hold down SHIFT.”
   To manually login or to login using a different user name and password, hold down the <Shift> key. The Log On window opens.
   a. In the **Directory** field, select the directory that you wish to log into. The default is “<Internal>.”

b. In the **User name** field, type the Windows user name assigned to you. Do not enter the domain\user name just enter your user name.

c. In the **Password** field, type the Windows password assigned to you.

d. Select the **Remember user name and directory** checkbox if you want the values you just entered in the **User name** and **Directory** fields to automatically be selected the next time that you log in.

e. Click [OK].

4. Your system may be configured to prompt you to confirm that you are authorized to use the application. To accept the terms of the authorization warning, click [Yes].

5. A warning message will be displayed that reminds you of the importance of **PERFORMING BACKUPS ON A REGULAR BASIS**. By default, the [No, I do not have an up-to-date backup of my database] radio button is selected. If you have not done a backup that includes all of the changes you have made to date, you will need to close FormsDesigner, perform a database backup, then start the application again.

Note: If your most recent database backup reflects all changes you have made to date, select the [Yes, I have an up-to-date backup of my database] radio button. If you select this, the [OK] button will be enabled. Click the [OK] button.

---

6. If you only have permissions to access and edit one form, then the currently saved layout definition of that form is loaded into the main window. If you have permissions to access and edit more than one form, the Open Form window will be displayed. Select the type of form you want to design, click the [OK] button, and the currently saved layout definition of that form is then loaded into the main window.

7. If segmentation is not enabled, skip this step. If segmentation is enabled:

   a. The Select Segment window opens. Select the segment you wish to log into.

   b. Click [OK].

Troubleshoot Logging In

If you attempted to log in and were unable to do so, make sure that the following conditions have been met:

- You entered a correct user name/password and specified the correct directory.
- If your system is configured to display an authorization warning, you accepted the terms.
- A valid license is installed.
- You have permission to use the application.

- If you attempted to log in and were unable to do so, make sure the following conditions have been met:
  - You entered the correct user name and password for the selected directory of a user with permission to use the application.
  - If the system is configured to display an authorization warning, then you accepted the terms.
  - Verify your acs.ini file has the correct LicenseServer Host and Port settings. The LS License Server service must be started on the specified Host.
  - Log into the License Administration application to verify a valid license is installed.
  - Software based licenses must be activated.
  - USB and Parallel licenses must have License Key Drivers installed.
  - If using single sign-on, ensure the pc user you are logged in as is linked to an internal B.A.S.I.S. user through an operational directory.

Assigning Directory and Internal Accounts to the User

It is possible to assign both an internal account and one or more directory accounts to a single user. Assigning both types of accounts increases the flexibility of the system during the authentication process. Meaning, if the directory service is down or cannot be found from the workstation where the user is logging on, then the user can use the internal account instead.

However, using both types of accounts means that you need to manage the internal account user names and passwords in addition to managing the directory accounts. Allowing a user to log on in multiple ways increases the probability that the user's access could be compromised. For that reason, it is recommended that you standardize on either internal or directory accounts, but not both.

There are cases where assigning both an internal account and a directory account to a user may make sense. In a system where directory accounts are predominantly used, you may also assign an internal account to a user who needs to access the system from locations where the directory service is unavailable. If internal accounts are predominantly used, you may want to assign a directory account to a user for that user's convenience, so that the user does not need to enter in a password to log on.

Log Out of the Application

1. Select **Log Off** from the **Form** menu.
2. If a form is open, it automatically closes.If there are unsaved changes you will be asked if you want to save the changes.

Note: After you log out of the application the main window remains opened but most of the toolbar and menu options are dimmed. To access all the application’s features you must log in again

Exit the Application

You can close and exit the application using the following methods:

- Double-click the icon located in the upper left corner of the title bar. If you are prompted to log off click the [Yes] button.
- Single click the icon located in the upper left corner of the title bar and select Close. If you are prompted to log of click the [Yes] button.

Close button

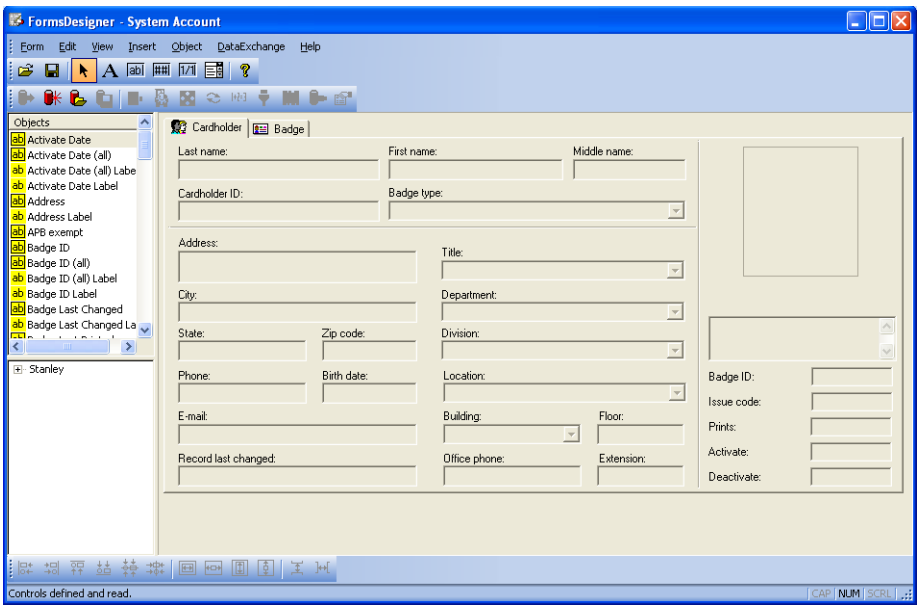
- Click the close button in the window's upper right corner. If you are prompted to log of click the [Yes] button.
- Select **Exit** from the **Form** menu.

Chapter 2: FormsDesigner Main Window

Main Window

When you log into FormsDesigner, you are prompted to select a form: Asset, Cardholder, Reader, Visit, or Visitor form. The FormsDesigner Main window will look different, depending on the form selected.

The example below displays the cardholder folder. The tables that follow describe general fields, menus, and toolbar buttons available on every form.



Screen Elements

Split Bar

A vertical bar that divides a window and that is used to adjust the relative sizes of the two subwindows—in this case, the Object List/Field List subwindow and the Editable Forms subwindow. A second split bar separates the Object List from the Field List.

Object List

A list that contains the names of all objects on an editable form in the FormsDesigner. Selecting an object on a form also selects the corresponding entry in the Object List. An object's type is denoted by the icon that precedes it. For example:

- ab Fld Social Security - denotes a field object
- ab Lbl Badge Type - denotes a label object

- - denotes a drop-down list (field) object

Field List

A list that contains the names of all fields in the database

Bounding Box

A rectangle drawn along the border of a selected object. It contains a series of small black squares called *handles* that can be used to resize the object.

Editable Form

A form whose objects can be manipulated using FormsDesigner. When you log into FormsDesigner, the appearance of the editable forms will be determined by the most recently saved layout definition. This will be either the default layout definition or the layout definition you've created using this software.

Form Tab

An area at the top of a form, shaped like the tab on a file folder, and containing an icon and a form name. Clicking on the tab switches the display to the corresponding editable form. For example, in the Cardholder folder, click on the Badge tab to switch to the Badge form.

Title Bar

The area at the top of the window that displays the name of the window

Minimize Button

A button that reduces the window to a title icon—the window's smallest possible size. An *icon* is a miniature graphical representation of something.

To restore a minimized window, click on its title icon.

Maximize Button

A button that expands the window to full-screen—the window's largest possible size. To restore a maximized window to its previous size, click on the double window button in the upper right corner.

Close Button

A button that contains an "X" and that closes the window

Status Bar

An area along the bottom of the window that contains explanatory or status information pertaining to the location of the cursor.

Resize Button

A rectangular area containing several diagonal lines, located in the lower right corner of a window. Clicking and dragging the resize button changes the window's height and width.

Control-menu Box

A box that contains an icon for the associated window, located in the upper left corner of the window. Clicking on the control-menu box displays a menu for moving, resizing, and closing the window.

Scroll Bar

A strip along one border of a window indicating that more information is available in a particular direction and can be scrolled into view. A window or box can have vertical and/or horizontal scroll bars.

Scroll Button

The arrow buttons that tip the ends of a scroll bar

Scroll Box

A button inside a scroll bar that indicates the relative position of the current view

Dimmed Elements

Throughout the application, you will notice that some screen elements appear less obvious than others. For example, what are normally black letters and white check boxes might be displayed in gray. The term for this is "dimmed" or "grayed out." Dimmed elements indicate that action on the dimmed item is not possible.

When you start the application, most of the main window is dimmed. It is only after logging in that the elements become undimmed so that you can access those features of the software.

Menus and Toolbars

The menu bar is a strip of words positioned just below the title bar on the main window. Each word represents a menu of choices. You can display a particular menu in either of two ways:

- Using the mouse: To display a menu, use the left mouse button to click on the menu name. To select a menu choice, click on the choice using the left mouse button.
- Using accelerator keys: Notice that each word in the menu bar contains one letter that is underlined. On your keyboard, first press <Alt> then press the letter that is underlined for the desired menu. For example, display the **Insert** menu using <Alt>, <I>. To then display the **Date field** menu, press <A>.

Each menu in the menu bar is described below. Notice that, in addition to the accelerator (<Alt> combination) keys, some menus have another shortcut using the <Ctrl> key. For example, you can save the active document by holding down the <Ctrl> key and pressing the <S> key. Other menu choices have single-key shortcuts, such as <F5> for **Edit** > **Refresh**.

Note: Some of the menu options are unavailable (will be dimmed) if you are using FormsDesigner Lite.

A toolbar is a strip of buttons. By default, the Main toolbar is positioned below the menu bar on the main window, and the Object toolbar is positioned at the

bottom of the main window. Each button on a toolbar corresponds to a pull-down menu option. You can change toolbars from anchored to floating. The toolbars are anchored by default. Anchored toolbars are displayed in horizontal rows below the menu bar. Anchored toolbars can be changed to floating toolbars, which allows the toolbar to be repositioned anywhere in the main window.

Form Menu

Menu option	Toolbar button	Function
Open		Loads currently saved layout definition of that form if you only have permissions to edit one form. If you have permissions to edit more than one form, displays the Open Form window where you can select the type of form you want to load. The button is displayed on the Main toolbar.
Save		Opens a Save Options window, allowing you to save your layout changes and preserve or destroy existing user-defined data. The button is displayed on the Main toolbar.
Restore From Last Backup		Restores the last known good layout configuration (displayed only if FormsDesigner detects that a system failure occurred).
Change Database		Change the current database.
Log On		Logs you into the application.
Change Password		Opens the Change Password dialog, enabling you to change your password (you must have the corresponding system level permission to do so).
Log Off		Logs you out of the application.
Exit		Ends your session.

Edit Menu

Menu option	Toolbar button	Function
Set Tab Ordering		Sets the order in which selection moves between fields when <Tab> is pressed.
Pages		Enables you to edit user-defined forms in the Cardholder, Visit, or Visitor form. This option is not available on the Asset or Reader form.
Delete Objects		Deletes one or more selected object(s) from the form.
Select Tool		Toggles between select object and insert object modes. The “Insert ___” toolbar buttons are activated in insert mode (i.e., when the selection tool is deactivated).

View Menu

Menu option	Function
Toolbar	Displays the Main toolbar.
Status Bar	Displays the status bar.

View Menu (Continued)

Menu option	Function
Split	Adjusts the relative sizes of the left (Object and Fields Lists) and right (editable forms) portions of the main window.
Refresh	Repaints the main window when another application has corrupted the display.

Insert Menu

Menu option	Toolbar button	Function
Label		Inserts a label object on the form. The button is displayed on the Main toolbar.
Text Field		Inserts a text field on the form. The button is displayed on the Main toolbar.
Encrypted Text Field		Inserts an encrypted text field on the form.
Date Field		Inserts a date field on the form. The button is displayed on the Main toolbar.
Numeric Field		Inserts a number field on the form. The button is displayed on the Main toolbar.
Drop-down List		Inserts a drop-down list field on the form. The button is displayed on the Main toolbar.
Page		Inserts a user-defined form. This option is not available on the Asset or Reader form.
System Object		Inserts a system object on the form. Contains a sub-menu of system objects that can be inserted, which depends on what type of form (Asset, Cardholder, Reader, Visit, or Visitor) is open.
View-Only Control		Inserts a read-only field on the form.

Object Menu

Menu option	Function
Align Horizontally	Aligns all selected objects along a horizontal.
Align Vertically	Aligns all selected objects along a vertical.
Center On Tab	Centers the selected object or group of objects on the form.
Evenly Space	Creates equal space between all selected objects.
Make Same Size	Makes all selected objects the same width or height.
Bring To Front	Moves selected object in front of overlapping objects.
Send to Back	Moves selected object behind overlapping objects.
Properties	Displays forms to set the properties of a selected field or label.

Object Menu - Align Horizontally Sub-menu

Menu option	Toolbar button	Function
Left		Aligns all selected objects to the left edge of the leftmost selected object. The button is displayed on the Object toolbar.
Center		Aligns all selected objects to their horizontal centers. The button is displayed on the Object toolbar.
Right		Aligns all selected objects to the right edge of the rightmost selected object. The button is displayed on the Object toolbar.

Object Menu - Align Vertically Sub-menu

Menu option	Toolbar button	Function
Top		Aligns all selected objects to the top edge of the topmost selected object. The button is displayed on the Object toolbar.
Middle		Aligns all selected objects to their vertical centers. The button is displayed on the Object toolbar.
Bottom		Aligns all selected objects to the bottom edge of the bottommost selected object. The button is displayed on the Object toolbar.

Object Menu - Evenly Space Sub-menu

Menu option	Toolbar button	Function
Horizontally		Aligns the outermost selected objects to their horizontal centers then evenly spaces all selected objects between them. The button is displayed on the Object toolbar.
Vertically		Aligns the outermost selected objects to their vertical centers then evenly spaces all selected objects between them. The button is displayed on the Object toolbar.

Object Menu - Make Same Size Sub-menu

Menu option	Toolbar button	Function
Minimum Height		Resizes the heights of all selected objects to the shortest selected object. The button is displayed on the Object toolbar.
Maximum Height		Resizes the heights of all selected objects to the tallest selected object. The button is displayed on the Object toolbar.
Minimum Width		Resizes the widths of all selected objects to the narrowest selected object. The button is displayed on the Object toolbar.
Maximum Width		Resizes the widths of all selected objects to the widest selected object. The button is displayed on the Object toolbar.

Help Menu

Menu option	Toolbar button	Function
Contents		Displays online help of the displayed form.
Search		Displays online help table of contents.
About		Displays software version and copyright information.

For more information, refer to DataExchange Menu and Toolbar on page 82.

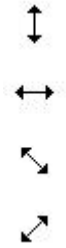
DataExchange Menu

Menu option	Toolbar button	Function
System Database Links		Displays the System Database Links form.
Execute configuration		Runs the open configuration.
New configuration		Opens the Configuration Properties window so you can add a new configuration.
Open configuration		Opens the DataExchange Configurations window where you can add, delete, open, close, import, and export configurations.
Save configuration		Saves the open configuration.

Main Window Procedures

Resize the Main Window

You can resize the main window to its maximum, minimum or an intermediate size.

Window Size	Button	Description
Minimum		To minimize the window, click on this button in the window's upper right corner. The window will be reduced to its smallest possible size, which will be a *title icon*. The title icon will be added to the *taskbar*, a strip at the bottom of your screen that lists all programs that are currently running on your computer. If you do not see the taskbar at the bottom of your screen, move the mouse pointer (don't click) down toward the bottom of your screen until the taskbar pops up. The following taskbar illustration contains the FormsDesigner title icon, "FormsDesigner": To restore a minimized window, click on its title icon.
Maximum		To maximize the window, click on this button in the window's upper right corner.
Intermediate		When the window is at its maximum size, this button is displayed in place of the single window (maximize) button. Clicking on this button resizes the window to the dimensions it had before it was maximized.
Resize arrow		When the mouse pointer is positioned over the border of the window, the resize arrow is displayed. Click and drag the resize pointer as follows: • up or down, if the resize pointer is positioned over the top or bottom border. This changes the window's height. • left or right, if the resize pointer is positioned over the left or right border. This changes the window's width. • diagonally, if the resize pointer is positioned over a corner of the border. This proportionally changes the window's overall size.

Resize the Objects Window and Forms (Split Bar)

The main window contains two split bars.

- A horizontal split bar separates the Object List from the Field List.

- A vertical split bar separates the left (ObjectList/Field List) and right (editable forms) portions of the main window.

You can move a split bar, thereby changing the relative sizes of the subwindows it defines. This enables you to view a greater portion of a list or of an editable form at one time.

There are two ways to reposition a split bar:

- Locate the mouse pointer over the split bar. The pointer will become a split arrow. Click and drag the split bar to the desired position.

  split arrow:
- Select **Split** from the **View** menu. This option moves the vertical split bar only. The pointer will become a split arrow on top of a bar. Move the pointer to the desired position, then click.

Move the Window

1. With the window at an intermediate size, click and drag the title bar.
2. When the window is in the desired position on the screen, release the mouse button.

Form Editing

Chapter 3: Form Editing

Edit Forms – Process Summary

Before you begin editing forms, review the section that follows.

The process of customizing Asset, Cardholder, Reader, Visit, or Visitor forms is simple and straightforward. Just follow the steps listed below. Refer to the associated procedures for detailed instructions.

Important: Modifying any of the forms, except for cosmetic changes, may cause reports to function improperly or not at all.

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1. Determine the specific information that you want the access control system to maintain.
2. Log into FormsDesigner. If you have permissions to access and edit more than one form, select the form you want to design from the Open Form window.
3. Where possible, reuse areas on the form that are occupied by existing objects. In other words, rename fields and labels, change their properties, move and resize them if necessary. For more information please refer to Select Objects on page 37, Object Properties Folders on page 47, Specify a Template on page 54, Manipulate Multiple Objects on page 38, and Center One or More Objects on the Form on page 40. If you wish to add entire new forms, follow the procedure Add User-Defined Forms on page 75.
4. Delete fields and labels that you don't need. For more information, refer to Delete One or More Objects on page 72.
5. Add new fields and labels. For more information, refer to Add an Object on page 40.
6. Change the order of data entry progression on the form. For more information, refer to Change the Tab Order on page 73.
7. Save the revised layout definition. For more information, refer to Save the Layout Definition on page 76.
8. Run the ID CredentialCenter application, open the form you designed, and test the new layout definition.

Important Form Editing Notes

- The purpose of FormsDesigner is to customize the appearance and functionality of the Asset, Cardholders, Reader, Visit, and Visitor folders. An object on a form is categorized as a field, a label, or a drop-down list and its properties are defined accordingly.

- Modifying any of the forms, except for cosmetic changes, may cause reports to function improperly or not at all.

- In general, the process of adding objects to the folders should be confined to the main body of a form, and you should avoid adding objects to the:
  - Active Information Section in the Cardholder and Asset folders (right part of the window).
  - Name and Type sections in the folders (top part of the window).
  - Push Button sections (bottom part of the window).
- It's a good idea to name objects logically. In general, this has been done in the default layout definition, as you'll observe in the Object List (label objects are named "Lbl" and field objects are named "Fld"; also, the field object and label object names match the actual label text that is displayed on the form)
- FormsDesigner has several options that are controlled by the software license. If you are in doubt as to what FormsDesigner options you have, open the License Administration application and examine the following:
  - **FormsDesigner Application (STD):** Controls whether you can use any version of the FormsDesigner application
  - **FormsDesigner Full Functionality (SWG-1210):** Controls which version you have - full FormsDesigner or FormsDesigner Lite, as long as the Max for FormsDesigner Application (STD) is not 0. If "true", you have the full FormsDesigner. If "false", you have FormsDesigner Lite.
  - **FormsDesigner UDF View Runtime: Controls** whether you can display a custom layout in the Cardholder screen.

FormsDesigner Lite

FormsDesigner Lite is used primarily for making cosmetic changes on forms without impacting the database. You can determine if you have FormsDesinger Lite by viewing your software license, in the License Administration application. If the following options in the software license are set accordingly, then you have FormsDesigner Lite and the license permission to use it:

- **FormsDesigner Application (STD).** has a Max greater than zero (0)

- **FormsDesigner Full Functionality (SWG-1210).** is set to "false"

If you have FormsDesigner Lite installed, it can be distinguished from the standard version of FormsDesigner through the title bar, which says "FormsDesigner Lite".

If you are running FormsDesigner Lite, the following applies for all forms, whether predefined or user-defined:

- Fields cannot be added, deleted, or modified.
- Labels cannot be deleted they can only be added or modified.
- Tab ordering can be changed.
- All controls can still be moved and resized, and field styles can be changed.

- You cannot move from page to page. Pages cannot be added or deleted; however page *names* can be modified.
- System objects cannot be inserted.
- You will not be able to modify any field or drop-down list properties EXCEPT default values and templates for fields.
- General properties can be modified EXCEPT for the view pages and edit pages properties.
- When saving, only the Save Cosmetics radio button will be available.

Basically, when you are using FormsDesigner Lite, the changes that you can make are merely cosmetic changes, only affecting the user interface.

Form Editing Procedures

Switch to a Different Database

In FormsDesigner, you can use different databases, selectable within the program. The current database is displayed in parentheses in the title bar. Keep in mind that when you change databases, you actually save and destroy data to the newly selected destination ODBC database. To switch to a different database:

1. Open FormsDesigner. Click the Start button then select **All Programs > B.A.S.I.S. ET693 > System Tools > FormsDesigner**.
2. Select the **Change Database** option from the **Form** menu. The Change Database dialog appears.
3. Using the **Database** drop-down list, select the new database you wish to work with and click the [OK] button.
4. Be sure to type in the correct **User name** and **Password** for that particular database when prompted. Click the [OK] button.

Select Objects

There are several ways to select objects on the form:

- Select one object by clicking on it.
- Select multiple objects by holding down the <Ctrl> key then clicking on each object you want to select.
- Select a group of adjacent objects by clicking and dragging to draw a box around the objects.

Selected objects will be highlighted and checked in the Object List. The mouse pointer will be displayed as a 4-headed arrow whenever it is positioned over a selected object.

Move and Resize One Object

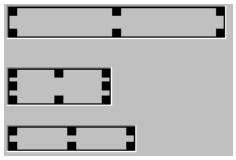
Recall that a selected object is enclosed by a rectangular bounding box that contains a series of square black dots called handles.

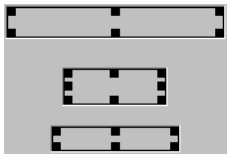
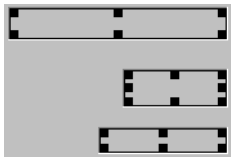
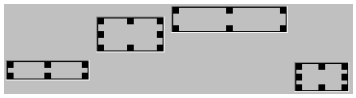
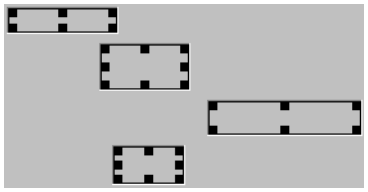
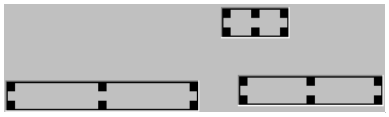
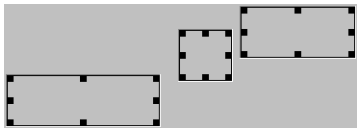
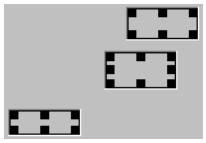
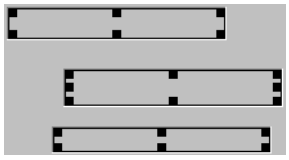
- To change the size of an object, position the mouse pointer over one of the object handles. The pointer will become a double arrow. Click and drag the pointer as follows:
  - Up or down, if the pointer is positioned over the top or bottom border. This changes the object's height.
  - Left or right, if the pointer is positioned over the left or right border. This changes the object's width.
  - Diagonally, if the pointer is positioned over a corner of the bounding box. This changes the object's overall size proportionally.
- To move an object around on the form, click and drag the object to its new position.

Manipulate Multiple Objects

You can align, resize, and space multiple objects. The Object toolbar offers the most convenient method for doing these things.

1. Select the objects to be manipulated.
2. Select the appropriate object toolbar button or **Object** menu option to produce the desired result. Use the following chart for guidance.

Object toolbar button	Choice from object menu	Resulting alignment	Illustration
	Align Vertically > Align Bottom	Align to Bottom: aligns all selected objects to the bottom edge of the bottom-most selected object	
	Align Vertically > Align Middle	Align Centers Vertically: aligns all selected objects to their vertical centers	
	Align Vertically > Align Top	Align to Top: aligns all selected objects to the top edge of the topmost selected object.	
	Align Horizontally > Align Left	Align to Left: aligns all selected objects to the left edge of the leftmost selected object	

Object toolbar button	Choice from object menu	Resulting alignment	Illustration
	Align Horizontally > Align Center	Align Centers Horizontally: aligns all selected objects to their horizontal centers	
	Align Horizontally > Align Right	Align to Right: aligns all selected objects to the right edge of the rightmost selected object	
	Evenly Space > Horizontally	Space Evenly Horizontally: spaces all selected objects equally between the leftmost and the rightmost selected objects	
	Evenly Space > Vertically	Space Evenly Vertically: spaces all selected objects equally between the top and the bottom selected objects	
	Make Same Size > Minimum Height	Resize to Shortest: resizes the heights of all selected objects to the shortest selected object	
	Make Same Size > Maximum Height	Resize to Tallest: resizes the heights of all selected objects to the tallest selected object	
	Make Same Size > Minimum Width	Resize to Narrowest: resizes the widths of all selected objects to the narrowest selected object	
	Make Same Size > Maximum Width	Resize to Widest: resizes the widths of all selected objects to the widest selected object	

Object toolbar button	Choice from object menu	Resulting alignment	Illustration
No Object Toolbar button	Bring to Front	Applies to overlapping objects only: Places the selected object on the top layer; i.e., in front of any objects that overlap it. This feature allows you to move an object when another object is drawn over it. Bring to front will allow you to move it with the mouse after using the Object List to select the hidden object. If you select multiple objects, the group will move as one large object. **Note:** The **Bring to Front** operation is specifically designed for use while editing in FormsDesigner. Overlapping objects are NOT supported by user defined forms. Any objects that are overlap when the form is saved will not be displayed correctly in the other access control applications.	
No Object Toolbar button	Send to Back	Applies to overlapping objects only: Places the selected object on the bottom layer; i.e., behind any objects that overlap it. If you select multiple objects, the group will move as one large object.	

Center One or More Objects on the Form

To move one or multiple objects horizontally to the middle of the editable form:

1. Select the object(s) to be centered. If you select multiple objects, the group will move as one large object.
2. Select **Center On Tab** from the **Object** menu.

Add an Object

1. Select the type of object to be added to the form, by choosing either the appropriate toolbar button or the appropriate choice from the **Insert** menu:

Toolbar button	Choice from Insert menu
	Label

Toolbar button	Choice from Insert menu
	Text Field
(no toolbar button)	Encrypted Text Field
	Numeric Field
	Date Field
	Drop-down List
(no toolbar button)	System Object
(no toolbar button)	View-Only Control

2. Click and drag to create a box to contain the object. Don't worry too much about size or placement for now; you can change these attributes later.

Note: The mouse pointer will change to cross hairs when positioned over the object after it has been added (if adding view-only controls, refer to Set View-Only Controls on page 44).

3. The corresponding Properties folder will be opened with the object type's Settings page displayed. For more information, refer to Object Properties Folders on page 47.

Note: If you are using FormsDesigner Lite, fields, objects, and controls cannot be added. Only labels can be added.

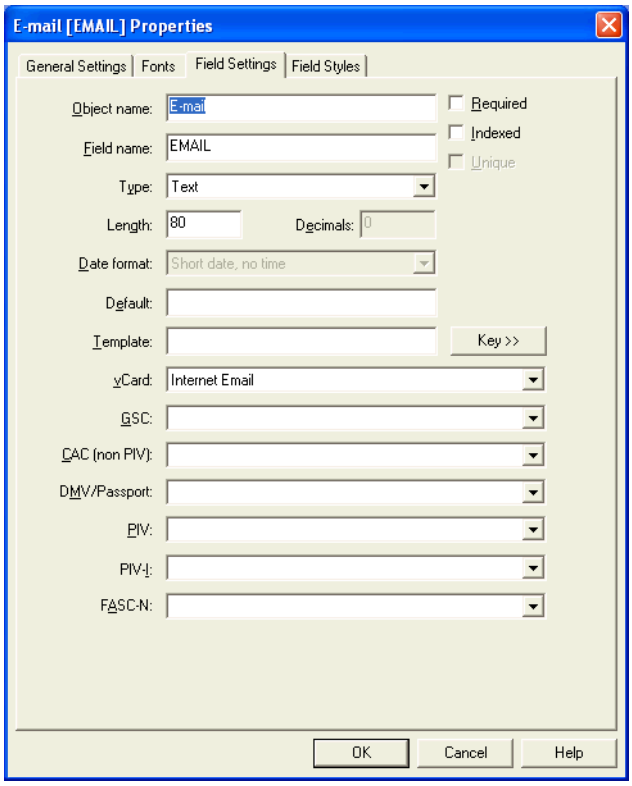
Configure Cardholder E-mail Fields

When you configure Cardholder e-mail fields they will display on the Person E-mail Fields form/tab in System Administration or ID CredentialCenter (**Administration** menu > **Cardholder Options** > Person E-mail Fields tab). Cardholder E-mail fields are used to determine which field is examined for an e-mail address when an e-mail notification of a visit is sent to a cardholder. E-mail notifications can be sent using the Visits form in the Visits folder in System Administration, ID CredentialCenter, or Visitor Management. To configure the cardholder e-mail fields:

1. Log into FormsDesigner. When the Open Form window opens, select **Cardholder**, and then click the [OK] button.

2. On the Cardholder tab, double-click the field below the E-mail label.

3. The E-mail [EMAIL] Properties window opens, and the Field Settings form/tab displays by default. In the **vCard** field, notice that the type selected is "Internet Email". Any field that has "Internet Email" specified as the **vCard** will be listed in the Cardholder e-mail fields listing window on the Person E-mail Fields form in the Cardholder Options folder in System Administration or ID CredentialCenter.



4. Click the [Cancel] button. You may wish to add a second e-mail address, such as a home e-mail address field. Add the field, making sure to select "Internet Email" as the **vCard**, and then you can select it in the Cardholder e-mail fields listing window on the Person E-mail Fields form in the Cardholder Options folder if you wish that second e-mail address field to be sent e-mail notifications.

5. When a visit is added, and the **Cardholder for this visit** check box is selected on the E-mail form in the Visits folder, the e-mail address specified in the **E-mail** field will receive an e-mail notification.

Configure Visitor E-mail Fields

When you add and configure Visitor E-mail fields they will display on the Person E-mail Fields form in System Administration or ID CredentialCenter

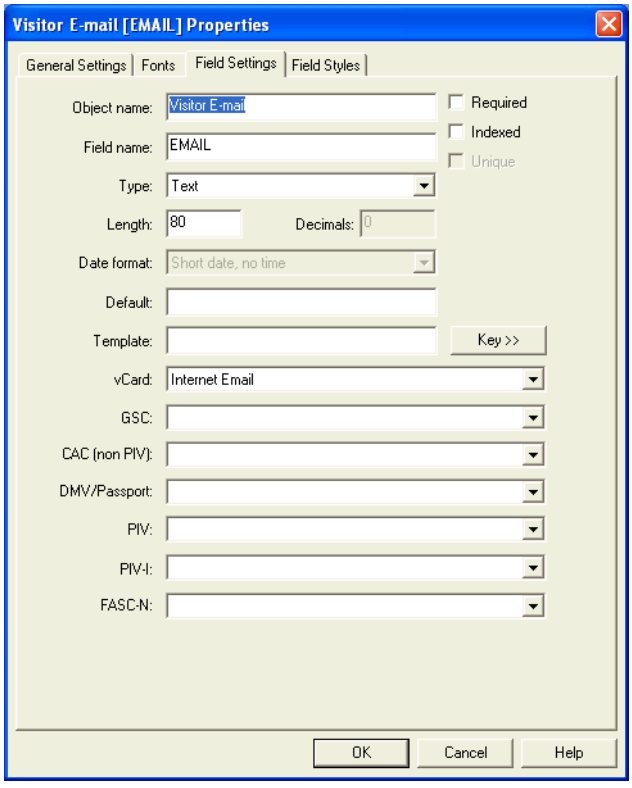
(**Administration** menu > **Cardholder Options** > Person E-mail Fields tab). Visitor E-mail fields are used to determine which field is examined for an e-mail address when an e-mail notification is sent to a visitor. E-mail notifications can be sent using the Visits form in the Visits folder in System Administration, ID CredentialCenter, or Visitor Management.

To configure the system so that e-mail notifications can be sent to visitors:

1. Log into FormsDesigner. When the Open Form window opens, select **Visitor**, and then click the [OK] button.
2. On the Visitor tab, double-click the field below the E-mail label.

3. The Visitor E-mail [EMAIL] Properties window opens, and the Field Settings form/tab displays by default. In the **vCard** field, notice that the type selected is “Internet Email”. Any field that has “Internet Email” specified as the **vCard** will be listed in the Visitor e-mail fields listing window on the Person E-mail Fields form in the Cardholder Options folder in System Administration or ID CredentialCenter.

Note: The default length of the field is 15 characters. It is recommended that you increase the field length to accommodate e-mail addresses.

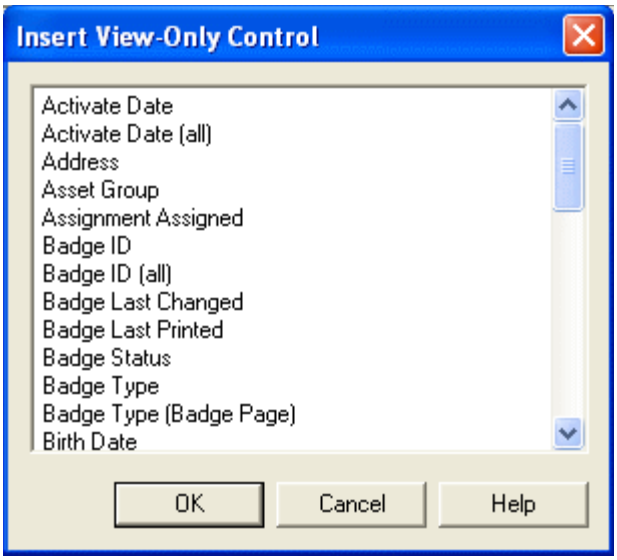


4. Click the [Cancel] button. You may wish to add a second visitor e-mail address, such as a home e-mail address field. Add the field, making sure to select "Internet Email" as the **vCard**, and then you can select it in the Visitor e-mail fields listing window on the Person E-mail Fields form in the Cardholder Options folder if you wish that second visitor e-mail address field to be sent e-mail notifications.
5. When a visit is added, and the **Visitor for this visit** check box is selected on the E-mail form in the Visits folder, the e-mail address specified in the **Visitor E-mail** field will receive an e-mail notification.

Set View-Only Controls

As the name implies, view-only controls are used to display data. If a field already exists on one form, you can place a view-only control on a different form for viewing purposes only. Unlike other types of objects, a view-only control cannot be edited on any form.

1. When you select **View-Only Control** from the **Insert** menu, the following window is displayed:



2. The window lists the object names (logical names, not actual field names) of all fields currently in the database. Select the field you wish to insert, the click the [OK] button.

Note: When you insert a view-only object it will be by default positioned over the **Photo View Mode** field in the upper right portion of the form. This is because the view-only fields are typically placed on the right side of the form. Of course, you can reposition it.

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3. The corresponding Properties folder will be opened with the object type's Settings page displayed, with the words "(View-Only)" after the Object Name. On the General Settings form, the **This object can be edited from:** field will be dimmed, indicating that this particular object cannot be edited

on any form. For more information, refer to Object Properties Folders on page 47.

System Objects versus System Fields

System objects are special types of objects. You can have no more than one of each kind of system object on a form. If you delete a system object from a form, its choice in the **Insert** > **System Object** menu is highlighted to indicate that you can then add it again. By contrast, *system fields* are fields that can't be deleted. They are required to maintain the minimum database configuration. An example of a system field in the Cardholder folder is **LASTNAME** (cardholder's last name).

Note: Neither System Objects nor Fields can be inserted in FormsDesigner Lite or the Visit folder.

In the Cardholder folder (Cardholder and Badge tab), system objects include:

- Activate Date - date on which the badge becomes valid
- APB exempt - when this check box is selected, any anti-passback violation for the selected badge will grant access into the anti-passback area with no violation noted in the Alarm Monitoring application
- Badge ID - identifier assigned to the badge
- Badge Last Changed - date on which badge record was last saved
- Badge Last Printed - most recent date on which badge was printed
- Badge Status - status of the badge (active, lost, destroyed, etc.)
- Badge Type - badge type found on the Cardholder screen
- Badge Type (Badge Page) - badge type found on the Badge screen
- Cardholder ID - cardholder's identification or Social Security number
- Cardholder Last Location - most recent access attempt (by the cardholder) whether access was granted or not
- Cardholder Record Last Changed - date on which cardholder record was last saved
- Deactivate Date - date on which the badge becomes invalid
- Deadbolt override - select this to give the cardholder assigned to this badge the ability to unlock a door that has been blocked with a blocking card

- Default door - allows you to configure the cardholder's default elevator door
- Default floor - allows you to configure the cardholder's default floor
- Descriptor - custom objects that are sent to an elevator dispatch system; can also be used to create custom check boxes on the form

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Note: The **Default door**, **Default floor**, and **Descriptor** system objects only apply to Elevator Dispatching.

- Destination exempt - select this check box if you want the selected badge record to be exempt from destination assurance processing
- Embossed - numbers or characters that are embossed on the badge
- First name - cardholder's first name
- Issue Code - active badge's issue code
- Middle Name - cardholder's middle name
- Photo Image - cardholder's photograph
- Pin Code - Personal Identification Number attached to the badge
- Signature - cardholder's signature
- Two Man Type - defines if this cardholder is a "supervisor" or "team member", when entering or leaving areas using two-man rule
- Use extended strike/held times - when this check box is selected, extended held open and extended strike times will be used for the selected badge
- Use Limit - number of times a cardholder can use his/her badge at readers marked with the "Enforce Use Limit" option

In the Asset folder, system objects include:

- Record last changed - date on which the record was changed last
- Last Inspection - date of last inspection
- Asset Photo Image - captured photo of the asset

In the Reader folder, system objects include:

- Reader Group 1
- Reader Group 2
- Reader Group 3
- Reader Group 4
- Reader Group 5
- Reader Group 6

In the Visitor folder, system objects include:

- Visitor First Name - first name of the visitor
- Visitor Middle Name - middle name of the visitor
- Badge Type - badge type found on the Badge form
- Visitor Last Changed - last time the visitor's record was changed

Object Properties Folders

Each object has a unique set of properties that are defined on one or more data entry forms in a Properties folder. These data entry forms differ with object type, as follows:

- Field Properties folder - defines properties of a text, date, or numeric field object
- Label Properties folder - defines properties of a label object
- Drop-down Properties folder - defines properties of a drop-down list field object
- Photo Image Properties folder - defines properties of the photo system object
- Signature Properties folder - defines properties of the signature system object
- Multiple Items Properties folder - defines properties when multiple objects are selected

Open an Object Properties Folder

You can open an Object Properties folder any of the following ways:

- Double-click on a field or label.
- Right-click on a field, label, group of fields, or group of labels.

Notes: Different Object Properties folders will open depending on whether you double-click or right-click on a field, field with a drop-down list, signature field, or photo image, or field label.

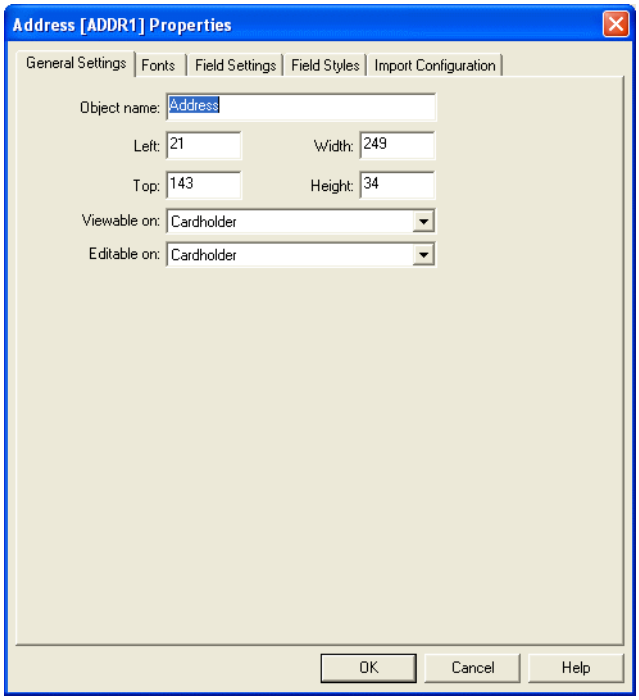
When you add an object to a form, the corresponding Properties folder is displayed automatically.

The property settings for each form are described on the following pages.

Field Properties Folder – General Settings Form

Notes: To open a Field Properties Folder see the Open an Object Properties Folder on page 47.

This form is available for fields with and without drop-down lists.



General Settings Form

Form element	Comment
Object name	The name of the field object, as it will appear in the Object List. If **Object name** was entered on the Field Settings form, it is carried over to this form. Though spaces and other characters are allowed, the **Object name** field should be descriptive in what the field actually refers to.
Left	The position on the form that defines the object's left boundary. It is measured in pixels from the left edge of the blue rectangle surrounding the form, which is position (0).
Top	The position on the form that defines the object's top boundary. It is measured in pixels from the top edge of the blue rectangle surrounding the form, which is position (0).
Width	Indicates the width of the object, in pixels
Height	Indicates the height of the object, in pixels
Viewable on	Indicates the form(s) on which the object may be displayed. If you have added any user-defined forms, each of them will be listed as a choice also.
Editable on	Indicates whether or not the object can be edited.
OK	Saves the current settings on all Field Properties forms, then closes the folder

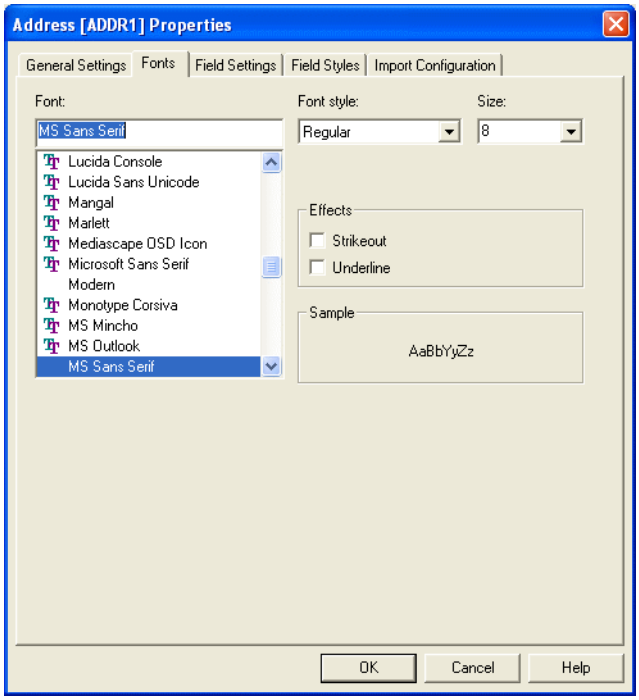
General Settings Form

Form element	Comment
Cancel	Closes the Field Properties folder without saving the current settings
Help	Displays online help for this topic

Field Properties Folder – Fonts Form

Notes: To open a Field Properties Folder see Open an Object Properties Folder on page 47.

This form is available for both fields with and without drop-down lists.



Fonts Form

Form Element	Comment
Font	Displays the name of the currently selected font
Font list	Lists all fonts installed on your computer
Font style	Lists available font styles (e.g., “Bold”, “Italic”), which vary with the Font selected
Size	Indicates the font size in points. You can type a number here or choose one from the drop-down list.

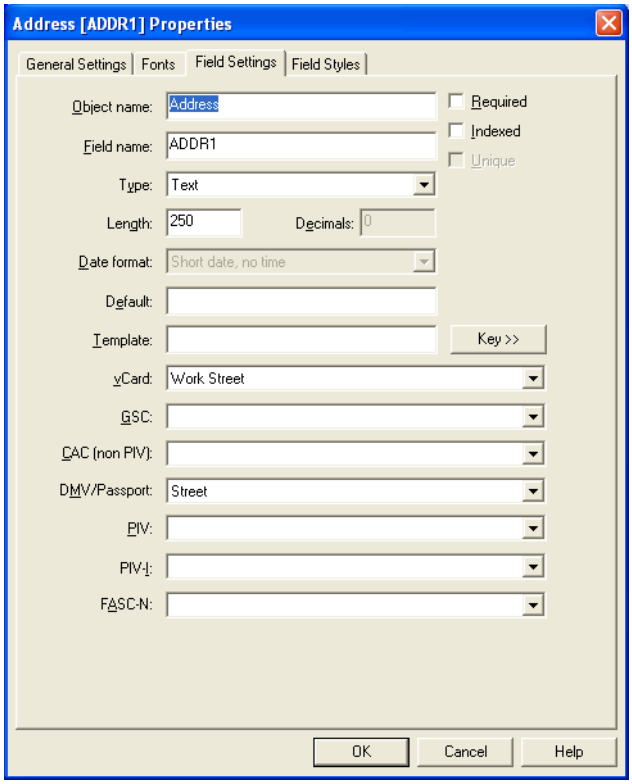
Fonts Form (Continued)

Form Element	Comment
Effects	Includes the **Strikeout** and **Underline** check boxes
Strikeout	If selected, any value in this field will be displayed with a horizontal line through the characters (e.g., ~~Active~~)
Underline	If selected, any value in this field will be displayed underlined (e.g., Active)
Sample	Displays sample text having the font characteristics selected on this form
OK	Saves the current settings on all Field Properties forms, then closes the folder
Cancel	Closes the Field Properties folder without saving the current settings
Help	Displays online help for this topic

Field Properties Folder – Field Settings Form (Compressed)

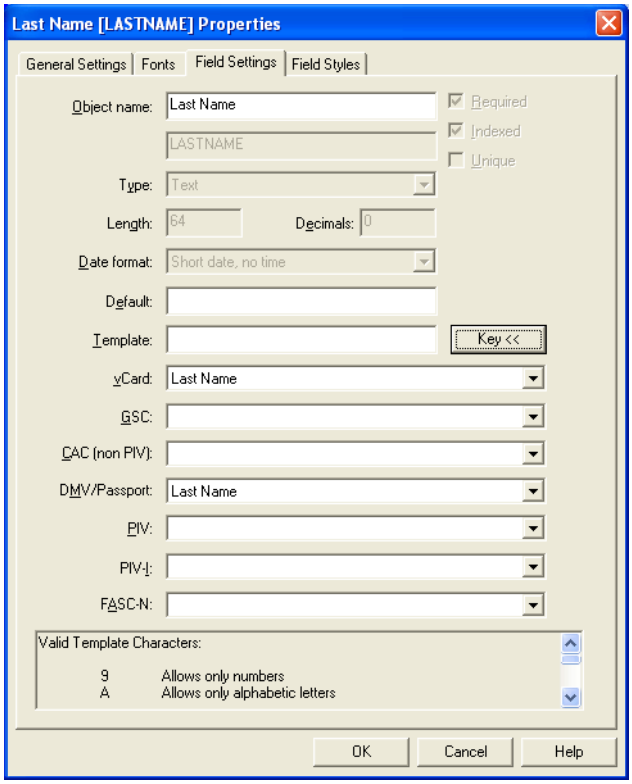
Notes: To open a Field Properties Folder see Object Properties Folders on page 47.

The Field Settings form is only available for fields without drop-down lists.



Field Properties Folder – Field Settings Form (Expanded)

Click the [Key] toggle between the compressed view and the expanded view.



Field Settings Form

Form element	Comment
Object name	The name of the field object, as it will appear in the Object List. If **Object name** is entered on this form it is carried over to the General Settings form. Though spaces and other characters are allowed, the **Object name** field should be descriptive in what the field actually refers to.
Field name/System field	The name of the actual access control database field associated with this object. This is the field name as it appears in the Field List. **Note:** A field name cannot begin with either "_" (the underscore character), "O_" (uppercase or lowercase letter "o" followed by the underscore character), or "T_" (uppercase or lowercase letter "t" followed by the underscore character). If this is a System Field, this will be labeled "(System Field)" rather than "Field Name", and will be dimmed, because you cannot change it.

Field Settings Form (Continued)

Form element	Comment
Required	If selected, this will be a required field in the database. If you make a field required, be sure to either: • specify a default value in the **Default** field described below, or • give permission to add/change the field to any end-users who will be entering data Otherwise, they will not be able to update the database records. **Note:** When adding a new field and both the **Unique** and **Required** check boxes are selected there is a chance an error will be displayed. To get around this you can just select **Unique** without checking **Required** or, if it must be both, you can add the field as unique and save the form. Then go through each record (or use DataExchange) to update the existing records and set the new field with unique data. Then go back to the form and select the **Required** check box.
Indexed	Select this check box if you anticipate searching on this field on a regular basis. If indexed, searching on the field is must faster. However, indexing increases the database size, and slows the process of adding or changing a record.
Unique	If selected, the value in this field must be unique for each record. **Note:** When adding a new field and both the **Unique** and **Required** check boxes are selected there is a chance an error will be displayed. To get around this you can just select **Unique** without checking **Required** or, if it must be both, you can add the field as unique and save the form. Then go through each record (or use DataExchange) to update the existing records and set the new field with unique data. Then go back to the form and select the **Required** check box.
Type	Indicates the type of field this object represents. Choices include date, number, plain text, or encrypted text. **Note:** The information in an encrypted text field displays as plain text in the Cardholder/Badge form however it is stored in the B.A.S.I.S. database as encrypted data. Therefore you cannot search on an encrypted text field in System Administration or ID CredentialCenter.
Length	Selects the field length, in characters.
Decimals	Indicates the number of digits that appear after the decimal point.
Date format	If you selected “Date” from the drop-down list in the **Type** field then choose the type of date format from this drop-down list.
Default	Indicates any default value for this field.
Template	Specifies a template used to ensure the integrity of data entered into this field.
Key << Key >>	Expands the form to display a chart of template characters and their descriptions. Compresses the form to hide the chart of template characters and their descriptions.
vCard	Applies to user-defined fields and automates the exchange (import and export) of personal information from Internet mail and business cards to the Cardholder database. Commonly used with the Corex Card scanner to populate the fields.
GSC	If using the GSC UDF format use this drop-down box to map the fields on the form. Specifically this exchanges information off government smart cards.

Field Settings Form (Continued)

Form element	Comment
CAC (non PIV)	If using the CAC UDF format use this drop-down box to map the fields on the form. Specifically this exchanges information off military CAC cards.
DMV/Passport	If using the DMV/Passport UDF format use this drop-down box to map the fields on the form. Specifically this exchanges information off drivers licenses and passports. Commonly used with the ID-Check device to populate the fields.
PIV	Use this drop-down to map the fields on the form for PIV, TWIC, or CAC EP cards. This field cannot be used at the same time as the FASC-N field since PIV, TWIC, and CAC cards import the FASC-N.
PIV-I	If using the PIV-I format, use this drop-down to map the fields on the form. This field can be mapped along with the PIV or FASC-N fields to support PIV, TWIC, CAC EP, and PIV-I cards at the same time.
FASC-N	Use this drop-down to map the fields on the form to import data from cards such as PIV, TWIC, or CAC EP.
OK	Saves the current settings on all Field Properties forms, then closes the folder.
Cancel	Closes the Field Properties folder without saving the current settings.
Help	Display online help for this topic.

Specify a Template

For a particular object, if the **Template** property on the Field Settings form is blank, free-form text can be entered into the field, up to the maximum number of characters specified by the **Length** property.

Alternatively, you can use *mask characters* to specify a template, thereby defining the type and format of data that can be entered. You can also include literal characters in the template. A *literal character* is displayed as itself in the field and can't be edited by the end-user. When the end-user types to the literal character, the cursor jumps past it. In the template 999-9999, for example, the hyphen is a literal character.

The access control software's default layout definition for the forms also uses masks for fields such as **Badge ID** and **Issue Code**, to enforce numbers only data entry.

Mask character	Description
9	Allows a number only
A	Allows an alphabetic character only, such as a, b, c, A, B, C, etc. Alphabetic characters are locale-sensitive. That is, they also include any modified letters that are language-specific, such as é, ñ, â, ç, ö, etc.
N	Allow a number or an alphabetic character
L	Allows an alphabetic character only, and forces it to lowercase
U	Allows an alphabetic character only, and forces it to uppercase

Mask character	Description
X	Allows any character in the ASCII Character Set
/	This is an escape character: it signals that the next character is to be treated as a literal character. If you want one of the above characters to be treated as a literal instead of a mask, you must place a "/" immediately before it.
Any character other than 9, A, N, L, U, X, or / is automatically treated as a literal character	

Here are some examples of templates:

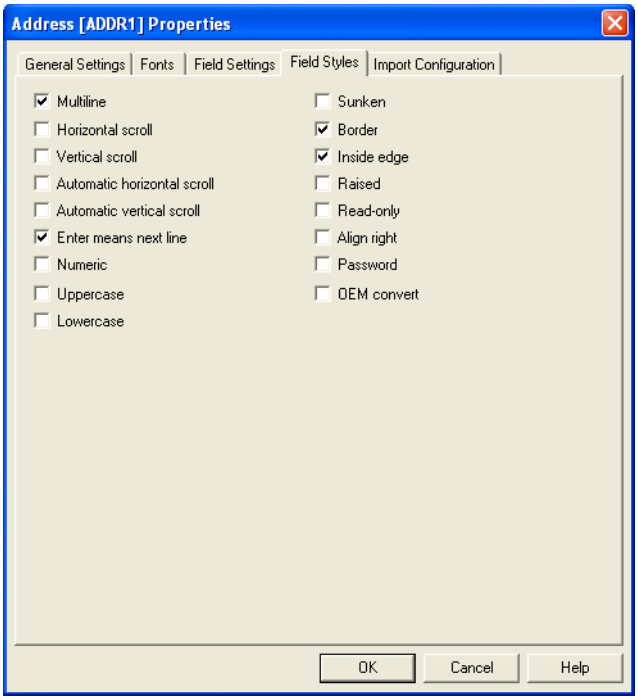
Template	Potential use/description
999-99-9999	To define Social Security number input. An end-user must enter nine numbers. The application inserts hyphens after the third and fifth digits.
(999) 999-9999	To define phone number input. An end-user must enter ten numbers. The access control software inserts parentheses around the first three digits, and inserts a hyphen after the sixth digit.
(999) 999-9999 [9999]	To define a phone number with a four digit extension.
U/XUUUU	This allows the first character to be an uppercase letter, places a literal 'X' after the first character, and allows 4 more uppercase letters.
99//99//9999	To define a date that requires two digits each for the month and day, and four digits for the year. Note the need to put an escape character "/" before the literal "/".
99999-9999	To define US ZIP + 4 code.

Note: It is important to note that the template and length fields do not coordinate with one another, and the length field can be overridden by the template field. For example you may have the length set to 30, but the template as only AA (denoting only entering two alphabet characters). This would allow the user to just input two letters. To get around this you would have to enter 30 A's to correspond with the 30 in the length field.

Field Properties Folder – Field Styles Form

Notes: To open a Field Properties Folder see Open an Object Properties Folder on page 47.

The Field Styles form is only available for fields that do NOT contain drop-down lists.



Field Styles Form

Form element	Comment
Multiline	If selected, the object is a multiple-line field (the default is single-line). • If **Automatic vertical scroll** is selected, the field displays as many lines as possible and scrolls vertically when the user presses <Enter>. • If **Automatic vertical scroll** is not selected, the field displays as many lines as possible and beeps if <Enter> is pressed when no more lines can be displayed. • If **Automatic horizontal scroll** is selected, the multiple-line field automatically scrolls horizontally when the end-user types past the right edge of the bounding box. To start a new line, the user must press <Enter>. • If **Automatic horizontal scroll** is not selected, data is automatically wrapped to the beginning of the next line when necessary; a new line is also started if <Enter> is pressed. The position of text is determined by the object size. If the object size changes, the text position changes. Multiple-line fields can have scroll bars. A field with scroll bars processes its own scroll-bar messages. Fields without scroll bars scroll as described above.
Horizontal scroll	If selected, the object will contain a horizontal scroll bar
Vertical scroll	If selected, the object will contain a vertical scroll bar
Automatic horizontal scroll	If selected, the data will be automatically scrolled to the right by 10 characters when the user types a character at the end of the line. When the user presses <Enter>, the field scrolls all data back to position 0.
Automatic vertical scroll	If selected, the data will be automatically scrolled up one page when the user presses <Enter> on the last line.
Enter means next line	If selected, a carriage return is inserted when the user presses the <Enter> key while entering data into a multiple-line field. Without this style, pressing <Enter> has the same effect as pressing the default push button on the form. This style has no effect on a single-line field.
Numeric	If selected, forces user input to consist of numbers only
Uppercase	If selected, all characters will be converted to uppercase as the end-user types them into the field
Lowercase	If selected, all characters will be converted to lowercase as the end-user types them into the field
Sunken	If selected, the object will appear to be pushed in
Border	If selected, a black box will be displayed along the object's bounding box
Inside edge	If selected, the inside top and left edges of the object's bounding box will be highlighted. This has a similar effect to that produced by selecting the **Sunken** check box, but the object will appear more pushed in.
Raised	If selected, the object will have a raised, three-dimensional appearance
Read only	If selected, the end-user will be unable to enter or edit data in the field

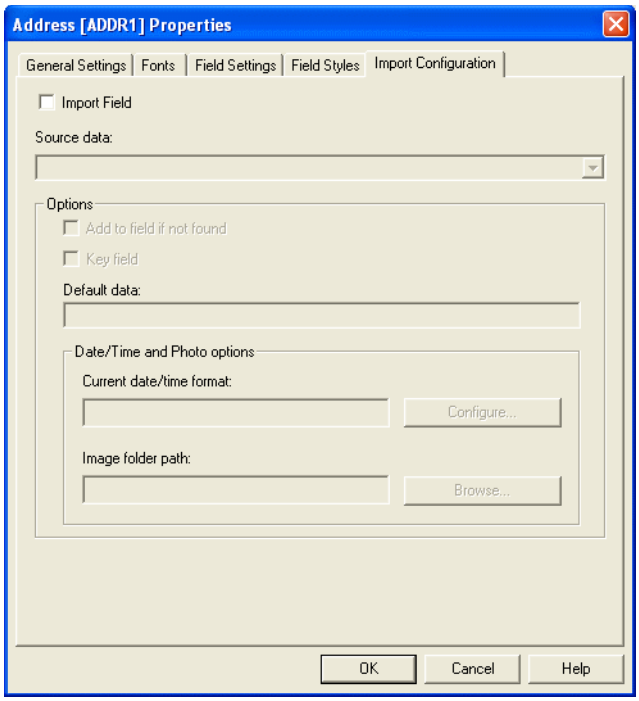
Field Styles Form (Continued)

Form element	Comment
Align right	If selected, data entered into a multiline field is aligned flush right
Password	If selected, all characters will be displayed as asterisks (*) as the end-user types them into the field
OEM convert	If selected, data entered into the field will be converted from the ANSI character set to the OEM character set and then back to ANSI. This style is most useful for fields that contain filenames.
OK	Saves the current settings on all Field Properties forms, then closes the folder
Cancel	Closes the Field Properties folder without saving the current settings
Help	Displays online help for this topic

Field Properties Folder – Import Configuration Form

This form can only be used if a DataExchange import configuration is open. To open the DataExchange import configuration, select **Open** from the

DataExchange menu option. For more information, refer to Process Outline: Text File Import or Export on page 83.



Import Configuration Form

Form element	Comment
Import Field	Select this check box to specify that the selected field will be imported in the open DataExchange configuration.
Source data	This is the name of the column of data in the source text file that will be used to populate this field when the configuration is executed.
Options	Contains the **Add to field if not found** check box, the **Default data** field, and the Date/Time and Photo options section.
Add to field if not found	If selected, the field will be added when the import occurs if the field is not found.
Key field	Displayed only if the open configuration has an **Operation type** that is anything but "Add." It is used to determine your keys. At least one key field is required on each table in a modify or delete configuration, but there are no restrictions for an add/modify configuration. A key field is used to uniquely identify a record that will be updated. Without key fields defined, multiple records could potentially be erroneously modified or even deleted.
Default data	This field is disabled for expressions and hidden when a database is specified as the source. If there is not a value specified in the file or database being imported from for the field, this default value is inserted.
Date/Time and Photo options	Contains the **Current date/time format** field, the [Configure] button, the **Image folder path** field, and the [Browse] button.
Current date/time format	If the field selected is a date or time field, the date/time format is displayed and the [Configure] button is enabled. To change the **Current date/time format**, click the [Configure] button.

Import Configuration Form (Continued)

Form element	Comment
Configure	Enabled for selection only when the field selected is a date or time field. If clicked, displays the Date/Time Configuration form.
Image folder path	Displays the filename and path for where the image files are saved. Click the [Browse] button to select where the images are located.
Browse	Displays an Open window from which you can search for where the images are saved.
OK	Saves the current settings on all Field Properties forms, then closes the folder
Cancel	Closes the Field Properties folder without saving the current settings
Help	Displays online help for this topic

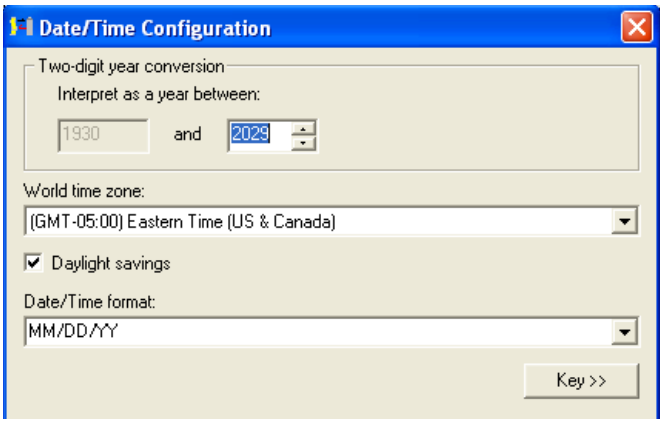
Field Properties Folder – Date/Time Configuration Form

Overview of the Date/Time Configuration Form

The Date/Time Configuration form is used to set how dates and times are interpreted. On the Date/Time Configuration form, the **Date/Time format** can be set to either a yyyy format or a yy format. If a yy format is specified, the setting in the two-digit year conversion section is used to interpret the first two digits of the year for this field. When you select a **Date/Time format**, this becomes the default for all other date/time fields unless you select another **Date/Time format** for those fields.

The two-digit year conversion section contains two years, with a 99-year range between them. The up and down arrows are used to control the upper and lower limits of this year range. Refer to the table below for an example.

The Date/Time Configuration form is displayed when the [Configure] button on the Import Configuration form is clicked. For more information see Field Properties Folder – Import Configuration Form on page 58.



Date/Time Configuration Form

Form Element	Comment
Two-digit year conversion	Contains the **Interpret as a year between *x* and *y*** fields.
Interpret as a year between *x* and *y*	Contains two years, with a 99-year range between them. The up and down arrows are used to control the upper and lower limits of this year range. For example: • If the upper and lower limits are 1900 and 1999, respectively, then the yy format date '00' will be interpreted as 1900. • If the upper and lower limits are 1901 and 2000, respectively, then the yy format date '00' will be interpreted as 2000. • If the upper and lower limits are 1945 and 2044, respectively, then the yy format date '50' will be interpreted as 1950.
Date/Time format	Determines how the dates and times are represented. The **Date/Time format** can be set to either a yyyy format or a yy format. If a yy format is specified, the setting in the Two-digit year conversion section is used to interpret the first two digits of the year. Click the [Key] button to view a key that contains a description of each setting.
Key	When clicked, toggles back and forth between two views. One view shows date and time format notations for the **Date/Time format** field. The other view hides the date and time format notations.
OK	Saves the current settings on the Date/Time Configuration form, then closes the form.
Cancel	Closes the Date/Time Configuration form without saving the current settings.

Date/Time Configuration Form Procedures

Set the Year Range for Two Digit Years

1. Open a DataExchange import configuration by completing the following:
   a. On the Cardholder, Badge, Visit, Visitor, or Asset form in FormsDesigner, right-click on a date or time field.
   b. On the Import Configuration form/tab in the **Date/Time format** drop-down list, select a format.
2. Click the [Configure] button.
3. The Date/Time Configuration form opens. If you selected a yy format in the **Date/Time format** drop-down list, use the up and down arrows in the Two-digit year conversion section to select the upper and lower limits of the year range. The range always remains 99 years.
   - Clicking the up arrow causes the upper and lower limit to increase by one.
   - Clicking the down arrow causes the upper and lower limit to decrease by one.

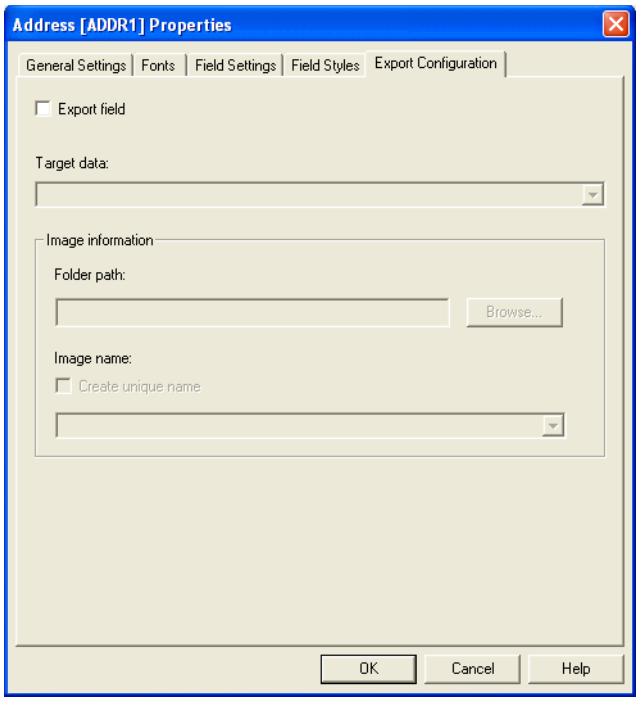
Note: To see a description of the formats, click the [Key] button.

4. When the desired range is displayed, click the [OK] button. The limits will be saved, and the Date/Time Configuration form will close.
5. Click the [OK] button on the Import Configuration form.

Field Properties Folder – Export Configuration Form

This form can only be used if a DataExchange export configuration is open. To open a DataExchange export configuration, select **Open** from the

DataExchange menu option. For more information, refer to Process Outline: Text File Import or Export on page 83.



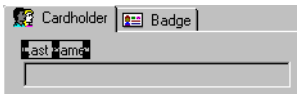
Export Configuration Form

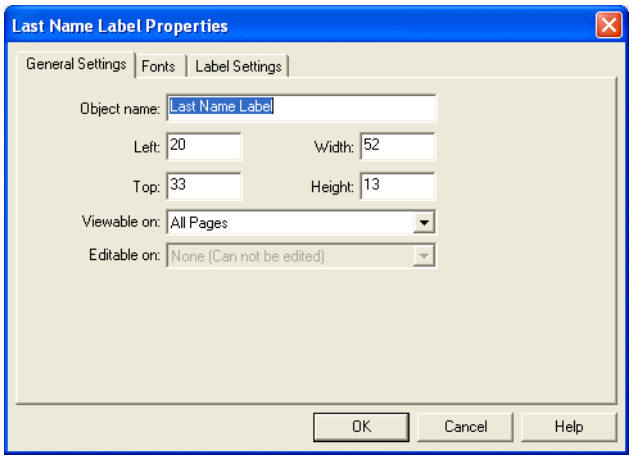
Form Element	Comment
Export field	Select this check box to specify that the selected field will be exported in the open DataExchange configuration.
Target data	Select the target field that the data will be exported to. These fields are configured by selecting the **Data Definitions** option from the **DataExchange** menu and typing values into the Column Names.
Folder path	Displays the filename and path for the where the image files will be saved.
Browse	Displays an Open window from which you can search for where to save the images.
Create unique name	Allows you to configure the name of the image you are exporting.
OK	Saves the current settings on all Field Properties forms, then closes the folder
Cancel	Closes the Field Properties folder without saving the current settings
Help	Displays online help for this topic

Label Properties Folder – General Settings Form

To open the Labels Properties Folder, double-click or right-click on any label for any field. For example to open the Last Name Label Properties folder, double-

click on the text, “Last name”, in the Last name field, located on the cardholders form.



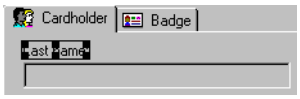


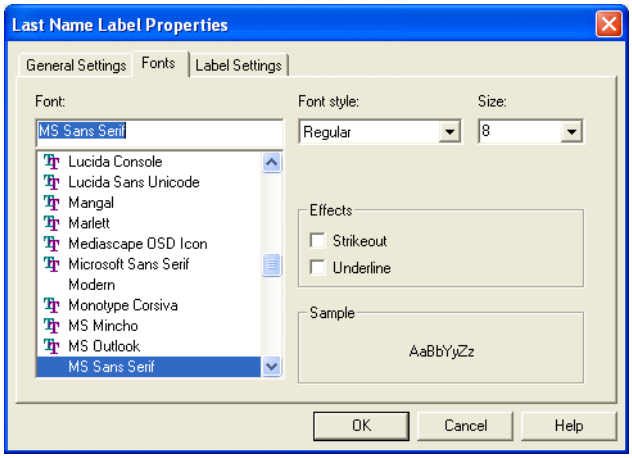
General Settings Form

Form Element	Comment
Object name	The name of the label object, as it will appear in the Object List. If **Object name** was entered on the Label Settings form, it is carried over to this form. Though spaces and other characters are allowed, the **Object name** field should be descriptive in what the field actually refers to.
Left	The position on the form that defines the object’s left boundary. It is measured in pixels from the left edge of the blue rectangle surrounding the form, which is position (0).
Top	The position on the form that defines the object’s top boundary. It is measured in pixels from the top edge of the blue rectangle surrounding the form, which is position (0).
Width	Indicates the width of the object, in pixels. You will not be able to change this value if the **Automatic size** check box is selected on the Label Settings form.
Height	Indicates the height of the object, in pixels. You will not be able to change this value if the **Automatic size** check box is selected on the Label Settings form.
Viewable on	Indicates the form(s) on which the object may be displayed.
Editable on	Indicates the form(s) on which the object may be editable.
OK	Saves the current settings on all Label Properties forms, then closes the folder
Cancel	Closes the Label Properties folder without saving the current settings
Help	Displays online help for this topic

Label Properties Folder – Fonts Form

To open the Labels Properties Folder, double-click or right-click on any label for any field. For example to open the Last Name Label Properties folder, double-click on the text, “Last name”, in the Last name field, located on the cardholders form.



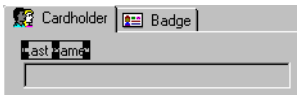


Fonts Form

Form element	Comment
Font	Displays the name of the currently selected font
Font list	Lists all fonts installed on your computer
Font style	Lists available font styles (e.g., “Bold”, “Italic”), which vary with the Font selected
Size	Indicates the font size in points. You can type a number here or choose one from the drop-down list.
Effects	Includes the Strikeout and Underline check boxes
Strikeout	If selected, any value in this field will be displayed with a horizontal line through the characters (e.g., ~~Active~~)
Underline	If selected, any value in this field will be displayed underlined (e.g., **Active**)
Sample	Displays sample text having the font characteristics selected on this form
OK	Saves the current settings on all Label Properties forms, then closes the folder
Cancel	Closes the Label Properties folder without saving the current settings
Help	Displays online help for this topic

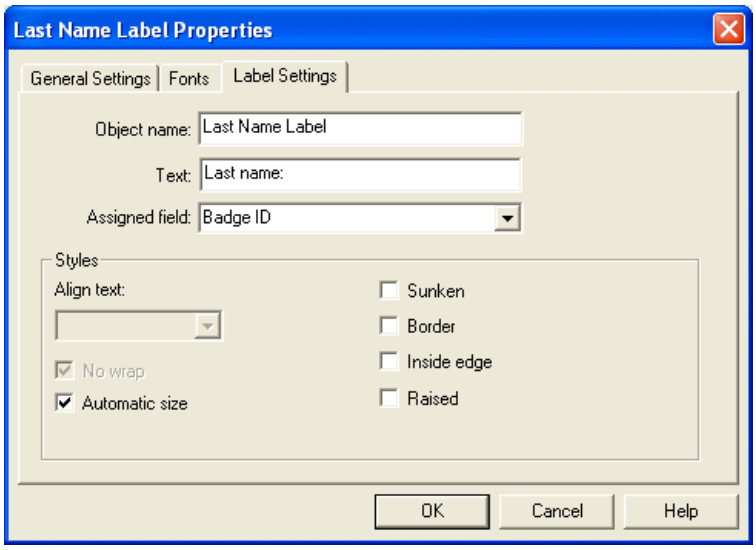
Label Properties Folder – Label Settings Form

To open the Labels Properties Folder, double-click or right-click on any label for any field. For example to open the Last Name Label Properties folder, double-click on the text, “Last name”, in the Last name field, located on the cardholders form.



The Label Settings form is also available for fields with scroll bars.

Label Settings Form



Label Settings Form

Form element	Comment
Object name	The name of the label object, as it will appear in the Object List. If **Object name** was entered on the General Settings form, it is carried over to this form. Though spaces and other characters are allowed, the **Object name** field should be descriptive in what the field actually refers to.
Text	Indicates the actual text information that will be displayed within the object’s bounding box on the form.
Assigned field	Selects the database field with which this label is to be associated. If an end-user doesn’t have permission to access the field, this ensures that the corresponding label will be dimmed along with the field.

Label Settings Form (Continued)

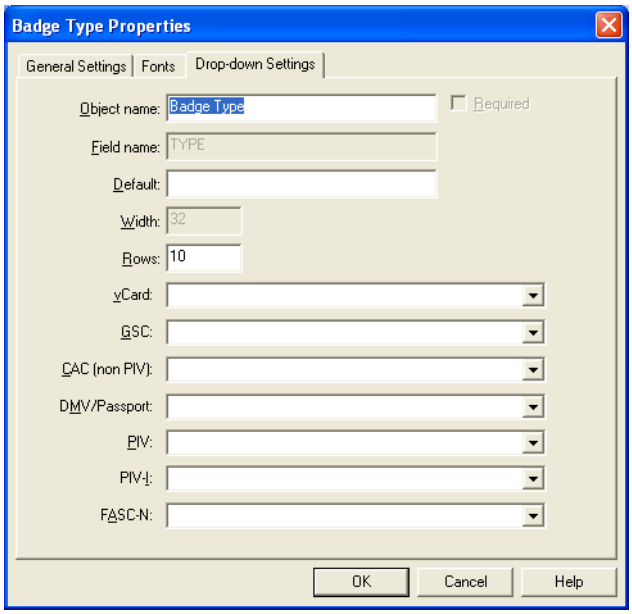
Form element	Comment
Styles	Includes all check boxes on this form, plus the **Align text** drop-down list
Align text	Indicates the alignment of the **Text** information within the object's bounding box. Choices include: • Left • Center • Right
No wrap	If selected and the text information is longer than the object is wide, the text will wrap within the object's bounding box to fit as much of the text is possible. If not selected, text that won't fit on one line within the bounding box will be truncated.
Automatic size	Resizes (shrinks or expands) the object to fit the text on one line. It also disables the **No wrap** check box. If this is selected, you will not be able to change the object's height or width.
Sunken	If selected, the object will appear to be pushed in
Border	If selected, a black box will be displayed along the object's bounding box
Inside edge	If selected, the inside top and left edges of the object's bounding box will be highlighted. This has a similar effect to that produced by selecting the **Sunken** check box, but the object will appear more pushed in.
Raised	If selected, the object will have a raised, three-dimensional appearance
OK	Saves the current settings on all Label Properties forms, then closes the folder
Cancel	Closes the Label Properties folder without saving the current settings
Help	Displays online help for this topic

Drop-down Properties Folder – Drop-down Settings Form

Notes:

To open a Drop-down Properties Folder see Open an Object Properties Folder on page 47.

The Drop-down Settings form is only available for fields that contain drop-down lists.



Drop-down Settings Form

Form element	Comment
Object name	The name of the drop-down list object, as it will appear in the Object List. Though spaces and other characters are allowed, the **Object name** field should be descriptive in what the field actually refers to.
Field name/ System field	The name of the actual access control database field associated with this object. This is the field name as it appears in the Field List. Note that a field name cannot begin with either "_" (the underscore character), "O_" (uppercase or lowercase letter "o" followed by the underscore character), or "T_" (uppercase or lowercase letter "t" followed by the underscore character). If this is a System field, this will be labeled "(System field)" rather than "Field name", and will be dimmed, because you cannot change it.

Drop-down Settings Form (Continued)

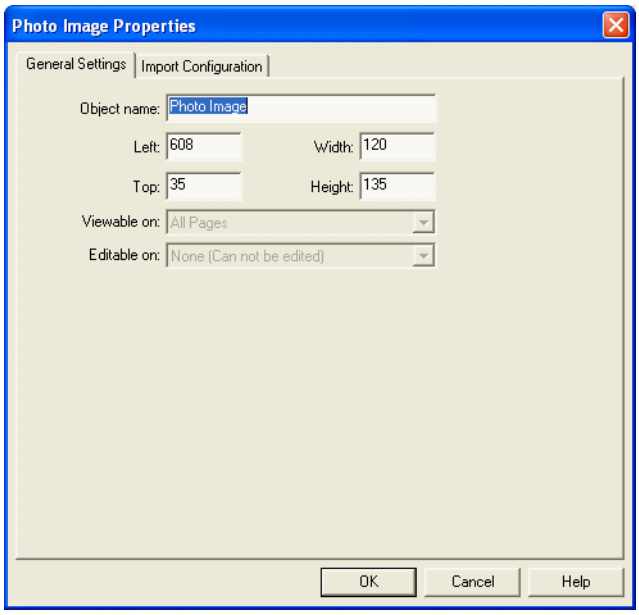
Form element	Comment
Required	If selected, this will be a required field in the database. If you make a field required, be sure to either: • specify a default value in the **Default** field described below, or • give permission to add/change the field to any end-users who will be entering data Otherwise, they will not be able to update the database records.
Default	Indicates any default value for this field
Width	Specifies the width of the drop-down list
Rows	Specifies the height of the drop-down list, as indicated by the number of lines displayed when an end-user clicks on the list's down arrow button. Typically, this equals the number of possible choices you intend to have for the list. If you specify a number that is less than the number of choices, not all choices will be displayed.
vCard	Applies to user-defined fields and automates the exchange (import and export) of personal information from Internet mail and business cards to the Cardholder database. Commonly used with the Corex Card scanner to populate the fields.
GSC	If using the GSC UDF format use this drop-down to map the fields on the form. Specifically this exchanges information off government smart cards.
CAC (non-PIV)	If using the CAC UDF format use this drop-down to map the fields on the form. Specifically this exchanges information off military CAC cards.
DMV/Passport	If using the DMV/Passport UDF format use this drop-down to map the fields on the form. Specifically this exchanges information off drivers licenses. Commonly used with the ID-Check device to populate the fields.
PIV	Use this drop-down to map the fields on the form for PIV, TWIC, or CAC EP cards. This field cannot be used at the same time as the FASC-N field since PIV, TWIC, and CAC cards import the FASC-N.
PIV-I	If using the PIV-I format, use this drop-down to map the fields on the form. This field can be mapped along with the PIV or FASC-N fields to support PIV, TWIC, CAC EP, and PIV-I cards at the same time.
FASC-N	Use this drop-down to map the fields on the form to import data from cards such as PIV, TWIC, or CAC EP.
OK	Saves the current settings on all Drop-down Properties forms, then closes the folder
Cancel	Closes the Drop-down Properties folder without saving the current settings
Help	Displays online help for this topic

Photo Image Properties Folder

With B.A.S.I.S. ET693 you can configure the name of any photo or signature you are exporting. For more information, refer to Field Properties Folder – Export Configuration Form on page 62.

Notes: To open a Photo Image Properties folder refer to Open an Object Properties Folder on page 47.

This form is available for fields that contain a photo image.

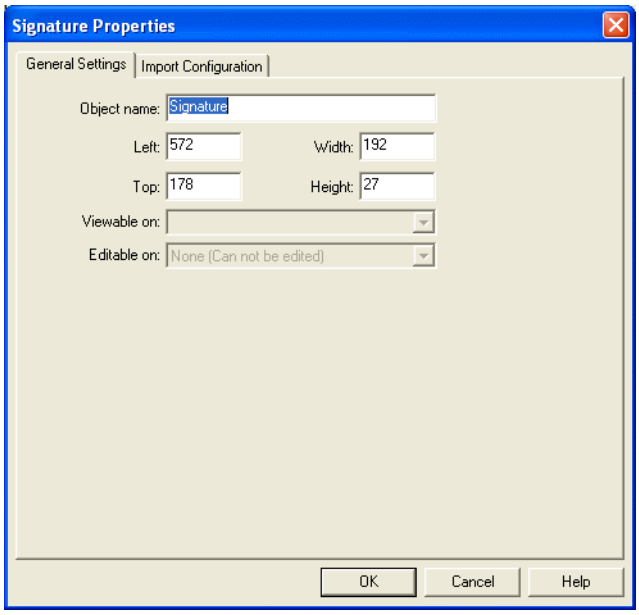


Signature Properties Folder

With B.A.S.I.S. ET693 you can configure the name of any photo or signature you are exporting. For more information, refer to Field Properties Folder – Export Configuration Form on page 62.

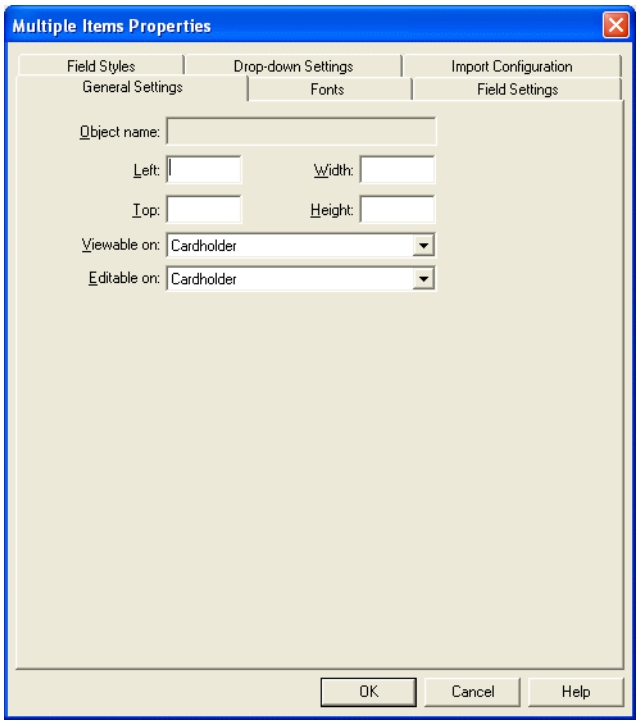
Notes: To open a Signature Properties folder refer to Object Properties Folders on page 47.

This form is available for signature fields.



Multiple Items Properties Folder

The Multiple Items Properties folder only appears if two or more items are selected. The tab headings are dependent upon the types of items selected.



Note: For information on how to select multiple objects, refer to Select Objects on page 37.

Delete One or More Objects

1. Select the object(s) to be deleted.
2. Do one of the following:
   - Press the <Del> or <Delete> key.
   - Select **Delete Object** from the **Edit** menu.
3. A message will be displayed asking you to confirm that you really want to delete the selected objects.
4. Click the [OK] button. The object will be deleted from the Object List. If you also selected the **Delete associated field(s)** check box, the field(s) will be removed from the Field List (except for system object fields).

Note: In FormsDesigner Lite, fields and labels cannot be deleted.

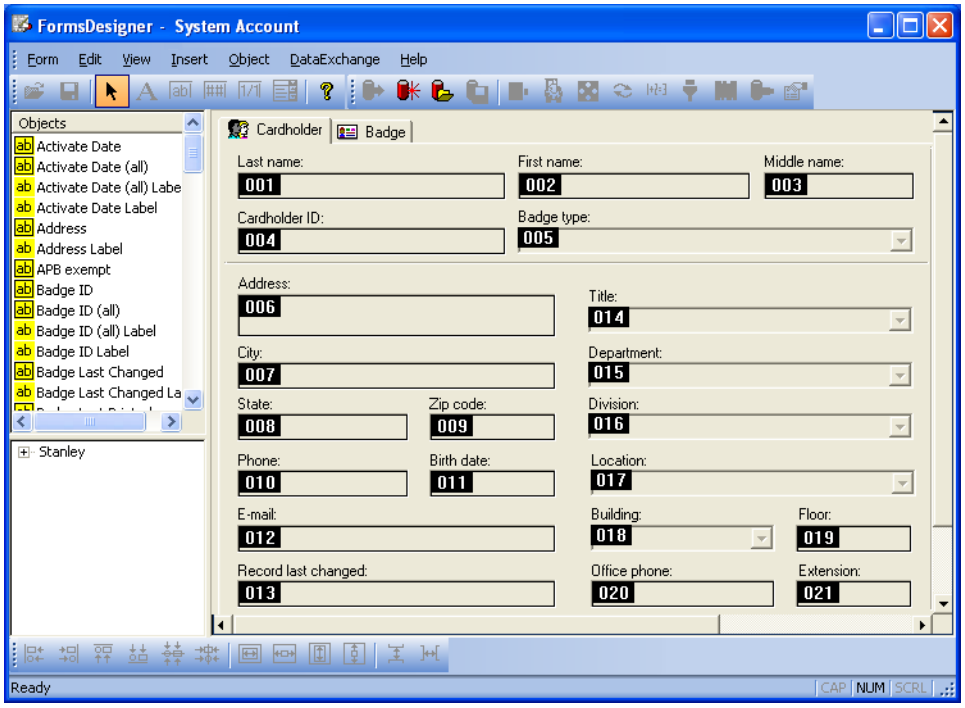
Change the Tab Order

The *tab order* is the order in which the <Tab> key moves the selection from one field to the next on the form. By default, tabs are ordered sequentially as each field is added to the form.

It is important to note that, once you begin this process, you can't cancel out of it, undo your actions, or revert to a saved tab order. Once you start changing the tab order, your changes are automatically saved. Once you're in tab ordering mode, if you make a mistake, your only choices are to begin again with step 2, or to exit tab ordering mode then begin again with step 1.

Here's how to change the tab order on the form:

1. Select **Set Tab Ordering** from the **Edit** menu. The form will be placed in tab ordering mode, as illustrated below. The number in the upper left corner of each field object indicates its place in the tab order.



2. Each field you (single-) click on will be assigned a number. Other fields may be renumbered automatically as a result. Here are some guidelines:
   - To make a field the first (number 1) in the tab order, double-click on it.
   - If you click on a field that currently has a higher number than the previous one you assigned, the new field will be given the number that is one more than the previous field. For example, if you have assigned fields 1 through 7, then you click on a field numbered 12, the field numbered 12 will change to field 8. Fields that had been numbered 8 through 11 will also be renumbered accordingly.
   - If you click on a field that has a lower number than the last one you assigned, the new field will be assigned the same number as the previous field. For example, if you have assigned fields 1 through 7, then you click on a field numbered 4, the field numbered 4 will change

to field 7. Fields that had been numbered 5 through 7 will also be renumbered accordingly.

- If you hold down the <Ctrl> key then click on a field, one of two things will happen when you click on the next field (without the <Ctrl> key):
  - If the second field has a lower number than the one that was <Ctrl>+clicked, the new field will be assigned the <Ctrl>+clicked field's number. For example, if you hold down the <Ctrl> key and click on field 6, then click on the field numbered 3, field 3 will then be numbered 6.
  - If the second field has a higher number than the one that was <Ctrl>+clicked, the new field will be assigned a number that is one more than the number that was <Ctrl>+clicked. For example, if you hold down the <Ctrl> key and click on field 6, then click on the field numbered 18, field 18 will then be numbered 7.

The following example, which has 10 fields, will help illustrate this process:

original tab order is	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
a. double-click here				X						
new tab order is	2	3	4	1	5	6	7	8	9	10
b. click here to assign #2							X			
new tab order is	3	4	5	1	6	7	2	8	9	10
c. click here to assign #3			X							
new tab order is	4	5	3	1	6	7	2	8	9	10
d. click here to assign #4									X	
new tab order is	5	6	3	1	7	8	2	9	4	10
e. click here to reassign #4			X							
new tab order is	5	6	4	1	7	8	2	9	3	10
f. click here to reassign #4							X			
new tab order is	5	6	3	1	7	8	4	9	2	10
g. click here to assign #5					X					
new tab order is	6	7	3	1	5	8	4	9	2	10
h. <Ctrl> + click here		X								
new tab order is	6	7	3	1	5	8	4	9	2	10
i. click here										X
new tab order is	6	7	3	1	5	9	4	10	2	8
j. <Ctrl> + click here					X					
new tab order is	6	7	3	1	5	9	4	10	2	8

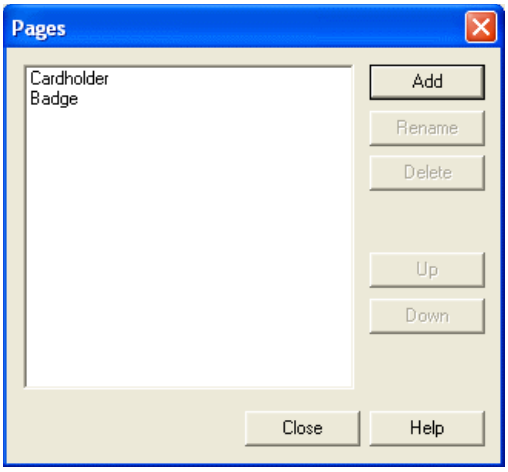
k. click here									X	

3. When you have finished changing the tab order, do one of the following to save the new order and exit tab ordering mode:
   - <Ctrl> + <Enter>
   - Select **Save and Exit Tab Mode** from the **Edit** menu
4. Click the [Yes] button when prompted, to save the tab order.

Add User-Defined Forms

Note: You can add pages in the Cardholders, Visit, and Visitor folder but not the Asset or Reader folders.

1. Select **Page** from the **Insert** menu. The Pages window displays:



2. Click the [Add] button.
3. In the edit box, type the name of the new form.
4. Click the [OK] button and two things happen:
   - The name of the new form appears in the list box of the Pages window.
   - A tab having the form's name is added to the main window.
5. Repeat steps 3 and 4 for each additional form you wish to add. The forms will be inserted from left to right in the order in which they were added.
6. Click the [Close] button to close the Pages window.

Note: In FormsDesigner Lite, page names can be modified. Pages cannot be added or deleted.

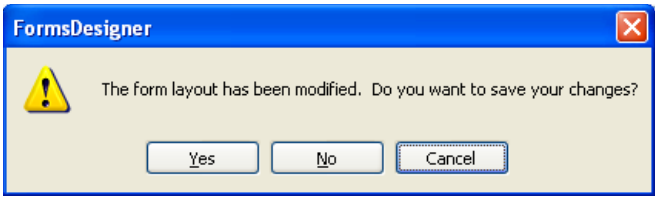
Manipulate User-defined Forms

Once you've added one or more user-defined forms, you can do the following things:

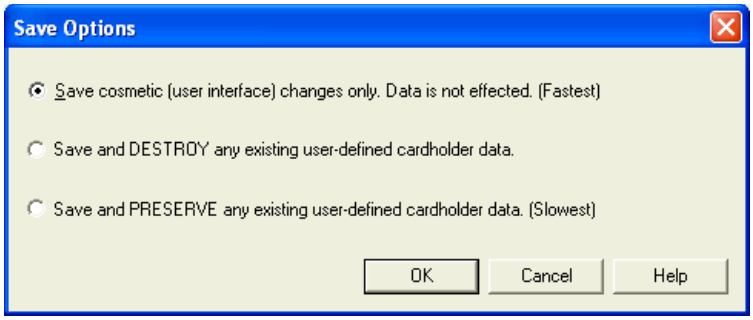
- Arrange objects on the user-defined forms, just like you would with any other form. Refer to the following procedures: Add an Object on page 40, Select Objects on page 37, Object Properties Folders on page 47, Specify a Template on page 54, Manipulate Multiple Objects on page 38, Center One or More Objects on the Form on page 40, and Change the Tab Order on page 73.
- Rearrange the user-defined forms. To reposition a user-defined form:
  a. Highlight the name of the form in the Pages window
  b. Click the [Move Up] button to move the entry up one position in the list, which moves the tab one position to the left in the main window. Click the [Move Down] button to move the entry down one position in the list, which moves the tab one position to the right in the main window. Note that you can only reposition the user-defined forms.
- Change the names of user-defined forms. To rename a user-defined form:
  a. Highlight the name of the form in the Pages window
  b. Click the [Modify] button.
  c. In the edit box, type the new name for the form.
  d. Click the [OK] button. This changes both the entry in the list box and the corresponding tab in the main window.
- Delete a user-defined form. To do this:
  a. Highlight the name of the form in the Pages window
  b. Click the [Delete] button. This removes the name of the form from the list box, and deletes the corresponding tab from the main window. Note that you can only delete the user-defined forms.

Save the Layout Definition

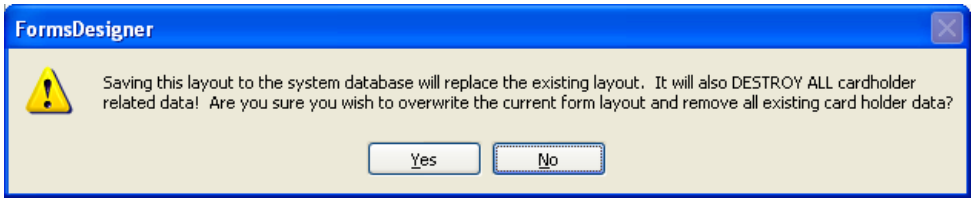
1. If you attempt to log out of or exit the FormsDesigner and you have made changes that have not been saved, the following message will be displayed:



2. If you click [No], the application will be terminated. If you instead click [Yes], the following message will be displayed. This message is also displayed when you select **Save** from the **Form** menu.


Save Options
Save cosmetic (user interface) changes only. Data is not effected. (Fastest)
Save and DESTROY any existing user-defined cardholder data.
Save and PRESERVE any existing user-defined cardholder data. (Slowest)
OK
Cancel
Help

3. Select one of the following options:
   - **Save cosmetic (user interface) changes only. Data is not affected.** This choice is available only if you made no changes to the database. It saves all cosmetic changes you made.
   - **Save and DESTROY any existing user-defined cardholder data.** This choice saves the current layout definition but destroys all user-defined data. Selecting this choice displays the following message:


FormsDesigner
Saving this layout to the system database will replace the existing layout. It will also DESTROY ALL cardholder related data! Are you sure you wish to overwrite the current form layout and remove all existing card holder data?
Yes
No

   If you then click [Yes], the following things will happen:
   - You will be prompted to authorize the removal of each user-defined drop-down list field.
   - The forms in the folder, accessed by access control software end-users, will use the new layout definition that you created on the editable forms.
   - The database tables, as defined by the layout, will be recreated.
   - As a result, the user defined fields of all records that existed prior to that moment will be DESTROYED.
   - **Save and PRESERVE any existing user-defined cardholder data.** This choice saves both the current layout definition and the user-defined cardholder data. If you choose this option, a message will be displayed indicating the current number of cardholder records and the total length of time that may be required to save the layout and data. Click [Yes] to proceed.

Note: FormsDesigner Lite allows you to make and save cosmetic changes only. This has the fastest save time and saves only the changes that you have made

to the user interface. Saving these changes will not affect the access control system database.

4. Form Translator runs automatically, updating the necessary data for the B.A.S.I.S. web applications.

Restore the Layout Definition after a System Failure

If FormsDesigner detects that an unexpected error triggered a system failure, the **Form** menu **Restore From Last Backup** choice becomes accessible. Hopefully, this menu choice will always be dimmed. If it is not dimmed, it is very likely that your software is corrupt. You must restore your layout definition to use FormsDesigner correctly.

1. Select **Restore From Last Backup** from the **Form** menu.
2. A message will be displayed asking whether your system is working properly.
   - If you click the [Yes] button, it will signify that you are having no problems with your FormsDesigner software. If so, a message will be displayed indicating that the last known “good” (properly functioning) layout definition will be deleted to save disk space.
   - More likely, you will click the [No] button, indicating that your system is NOT working properly. FormsDesigner will restore the last known good layout definition.

DataExchange

Chapter 4: Introduction to DataExchange

Overview of DataExchange

Endian is the ordering of bytes in a multi-byte number. Big endian is ordering bytes such that the most significant byte has the lowest address.

Using DataExchange you can import data into the B.A.S.I.S. database or export data from the database. Data can either be in the form of database tables or a variety of text files including fixed length or delimited ASCII, Unicode and Big Endian text files.

Different options under the DataExchange menu allow you to configure a variety of actions, expressions and conditions to execute during data exchange.

DataExchange Functions

The focus of DataExchange is to:

- Import/export cardholder-related data (including badge, visitor, asset and badge type data). Exceptions include card formats and segments.

Note: Badge types can be imported into systems with non-segmented badge types and under certain restrictions into regions. Badge type export has no restrictions. Imported badge types must be configured through System Administration once they are imported.

- Import/export any sort of data contained in the B.A.S.I.S. database, depending on the type of system you have.
- Provide a simple interface to define DataExchange configurations and map data to/from B.A.S.I.S. cardholder fields.
- Run import/export configurations unattended by using the same scheduler functionality available in System Administration.

When to Use DataExchange

Why would you want to use DataExchange? DataExchange is used primarily for the following reasons:

- B.A.S.I.S. typically replaces legacy systems. In order to use the existing data, the data is extracted from the legacy system into an ASCII delimited text file and then imported into B.A.S.I.S. using DataExchange.
- Third party applications, especially human resource systems, need to share information about Cardholders with B.A.S.I.S. software. DataExchange can be used to exchange this information in batch mode.

Required License

To use the DataExchange feature in FormsDesigner, your license must have DataExchange enabled. If DataExchange is not enabled, the DataExchange functionality in FormsDesigner will not appear.

DataExchange Menu and Toolbar

The **DataExchange** menu is only visible in FormsDesigner for users who have permission to use DataExchange.

DataExchange Menu

Menu option	Toolbar button	Function
Execute		Runs the configuration that is open.
New		Opens the Configuration Properties form, where you can select options for a new configuration to be used to import or export data.
Open		Opens the DataExchange Configurations form, where you can choose a configuration to open from a list of every configuration on the system, import a configuration from a file, or export a configuration to a file.
Save		Saves the configuration that is open.
Access Levels		Opens the Access Level Assignments form, where access levels can easily be configured. To use this menu option, an import configuration must be open.
Actions		Opens the DataExchange Actions form, where you can add new actions, modify or delete existing actions. B.A.S.I.S. currently has two actions: writeback and skip.
Conditions		Opens the DataExchange Conditions form, where you can add new conditions, modify or delete existing conditions. Conditions are used for writeback and skip actions and conditional expressions.
Exchange Map		Opens the Exchange Map form, where you can map anything. This option is for advanced users. Using this option you can map access panels, readers, etc.
Expressions		Opens the DataExchange Expressions form, where you add new expressions, modify existing expressions or delete existing expressions. To use the Increment expression an import configuration must be open.
Filters		Opens the Filters form, where you can enter a SQL where clause to be applied to the source database. This menu item can only be used when the source specified is a database.

DataExchange Menu (Continued)

Menu option	Toolbar button	Function
Data Definitions		Opens the Database or Text File Data Definition form, where you can specify the relationships between the fields in the database or file that you are exporting to.
System DB Links		Opens the System Database Links form, where you can specify how different tables are linked together and what tables you want to use.
Properties		Opens the Configuration Properties form, where the properties that the configuration was created can be viewed. The properties can also be modified, with the exception of the **Operation type, Configuration type**, and **Data definition type**.

General DataExchange Procedures

Process Outline: Text File Import or Export

This is an overview of the process of importing or exporting an ASCII data file. For specific details on how to accomplish each step, see the references given.

1. Log into FormsDesigner. For more information, refer to Log In on page 14.
2. Create a DataExchange configuration.
   a. The first step in creating a configuration is to select the configuration properties. For more information, refer to Configuration Properties Form Procedures on page 91.
   b. The next step depends on the selections you have made so far.
      - If you are importing a text file proceed to Select the Text File Data Definition Options on page 96.
      - If you are exporting a text file proceed to Configure the Database Links on page 101.
   c. The third step in creating a DataExchange configuration depends on the selections you have made so far.
      - If you are importing from a text file proceed to Configure the Database Links on page 101.
      - If you are exporting to a text file proceed to Select the Text File Data Definition Options on page 96.
3. Map the fields in the configuration. For more information please refer to Map Fields in a Configuration - Simple Method on page 84 or Map Fields in a Configuration - Advanced Method on page 126.
4. Save the DataExchange Configuration. For more information, refer to Save a DataExchange Configuration on page 86.
5. Run the DataExchange Configuration. For more information please refer to Run a DataExchange Configuration on page 87.

Process Outline: Database-to-database Import or Export

This is an overview of the process of importing or exporting a database. For specific details on how to accomplish each step, see the references given.

1. Log into FormsDesigner. For more information, refer to Log In on page 14.
2. Create a DataExchange configuration.
   a. The first step in creating a configuration is to select the configuration properties. For more information, refer to Configuration Properties Form Procedures on page 91.
   b. The next step depends on the selections you have made so far.
      - If you are importing a database proceed to Select the Database Data Definition Options on page 98.
      - If you are exporting a database proceed to Configure the Database Links on page 101.
   c. The third step in creating a DataExchange configuration depends on the selections you have made so far.
      - If you are importing from a database proceed to the Database Links Procedure on page 101.
      - If you are exporting to a database proceed to Database Data Definition Form Procedures on page 98.
3. Map the fields in the configuration. For more information please refer to Map Fields in a Configuration - Simple Method on page 84 or Map Fields in a Configuration - Advanced Method on page 126.
4. Save the DataExchange Configuration. For more information, refer to Save a DataExchange Configuration on page 86.
5. Run the DataExchange Configuration. For more information refer to Run a DataExchange Configuration on page 87.

Map Fields in a Configuration - Simple Method

This method is a visual method of mapping fields in a configuration, and does not require you to understand the B.A.S.I.S. database layout. If you are familiar with the B.A.S.I.S. database layout, you may prefer the Map Fields in a Configuration - Advanced Method on page 126.

Advantages of Simple Method

The simple method offers several advantages over the advanced method:

- If you add a field that is dependent on another table and field, the additional required table and field will automatically be added to the configuration for you.
- All drop-down lists require an additional table and field to be added to the configuration. Any additional tables and fields that are required are determined and automatically added for you when you use the simple method.

Process Outline: MAP FIELDS IN A CONFIGURATION

1. Display the form that contains the fields you want to import to or export from. This can be done by logging in or by selecting **Open** from the **Form** menu, then choosing the desired form. Choices include “Asset”, “Cardholder”, “Reader”, “Visit”, and “Visitor.”
2. Open a DataExchange configuration; from the **DataExchange** menu select **Open**. Select the configuration and click [Open].
3. Right-click the field you wish to import to or export from. The Properties window opens.
4. If the configuration is an import configuration, click the Import Configuration tab. Otherwise skip to the next step.

Note: The Import Configuration tab does not display for the Visits form. The only way to import to the Visits form is through the Exchange Map form. See Map Fields in a Configuration - Advanced Method on page 126.

- On the Import Configuration form:
  a. Select the **Import field** check box.
  b. In the **Source data** drop-down list, select the field that the imported data will be mapped to.
  c. The options enabled in the Options section depend on the type of information being imported.

     The **Add to field if not found** check box is only enabled when mapping a drop-down list. Select the check box if you wish to add the field when the import occurs and the field is not found.

     The **Key field** check box is only used if the open configuration has an **Operation type** that is anything but “Add.” Select this check box if the field will be used to determine your keys. At least one key field is required on each table in a modify or delete configuration, but there are no restrictions for an add/modify configuration. A key field is used to uniquely identify a record that will be updated. Without key fields defined, multiple records could potentially be erroneously modified or even deleted.

     The **Default data** field is disabled for expressions and hidden when a database is specified as the source. If the **Default data** field is enabled, type a value that will be inserted when the import occurs for each record that doesn’t have a value specified for the selected field. Entering a default value prevents the record from failing when there is no value for the field, but the field requires a value.

     If the **Current date/time format** can be changed, click [Configure] to do so. The Date/Time Conversion form opens. Specify how the year will be interpreted and the format for the date/time then click [OK].

To configure the image folder path: Click [Browse] and navigate to the location where the images are stored. Click [OK] twice.

The **Image folder path** is only used when mapping an image or signature field and when your text file or database is storing only the image/signature name. If your source stores the full path, don't configure the image folder path.

5. If the configuration is an export configuration, click the Export Configuration tab.

Note: The Export Configuration tab does not display for the Visits form. The only way to export from the Visits form is through the Exchange Map form. See Map Fields in a Configuration - Advanced Method on page 126.

- On the Export Configuration form:
  a. Select the **Export field** check box.
  b. In the **Target data** drop-down list, select the field that the exported data will be mapped to. The items listed in the Target data were configured in step 4 of Database Data Definition Form on page 96 in this user manual.
  c. If the field that was originally selected was an image or signature, the Image information section will be enabled for selection. In the Image information section:

     Click [Browse] and navigate to the folder where the images will be stored.

     Click [OK]. The path displays in the **Folder path** field.

     If you want a unique name to automatically be assigned to the image/signature file select the **Create unique name** check box.

     If you want to configure your own file name click the drop-down box and select the appropriate **data**.

Note: All fields that you select using this method appear in the Exchange Map form, which you display by selecting **Exchange Map** from the **DataExchange** menu.

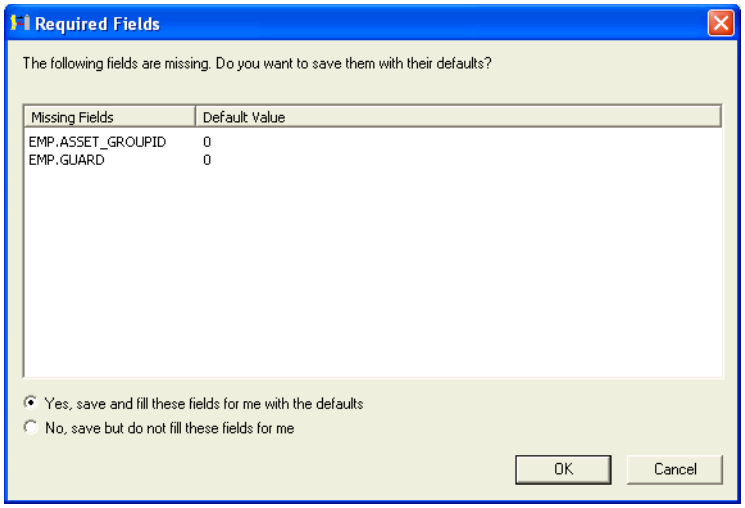
---

6. Click [OK] to accept the settings.

Save a DataExchange Configuration

1. In FormsDesigner, select **Save** from the **DataExchange** menu.

2. If the DataExchange configuration is an import of either a file or database, and a field that you are importing is missing, the Required Fields form displays.



- Click the [Yes] radio button to have the fields added to the configuration and auto-filled with their default values. Then click [OK].
- Click the [No] radio button if you wish to save the configuration, but add the required fields later using the Exchange Map form. Then click [OK].

Run a DataExchange Configuration

1. In FormsDesigner, select **Open** from the **DataExchange** menu.
2. Select the configuration you wish to run. If you want to create a new DataExchange configuration please refer to Select the Configuration Properties on page 91. If you want to import a DataExchange configuration please refer to Import a DataExchange Configuration on page 105 or Export a DataExchange Configuration on page 106.
3. Select **Execute** from the **DataExchange** menu.

Note: You can view imported data in ID CredentialCenter, System Administration and other B.A.S.I.S. applications.

View the DataExchange Log

DataExchange logs configuration execution results in the **logs** directory of the B.A.S.I.S. installation path. It reports the following:

- Name of the configuration that was executed
- Time the execution started
- Time the execution ended
- Total number of records processed

- Number of successful records
- Number of warnings
- Any errors or warnings that occurred during the execution

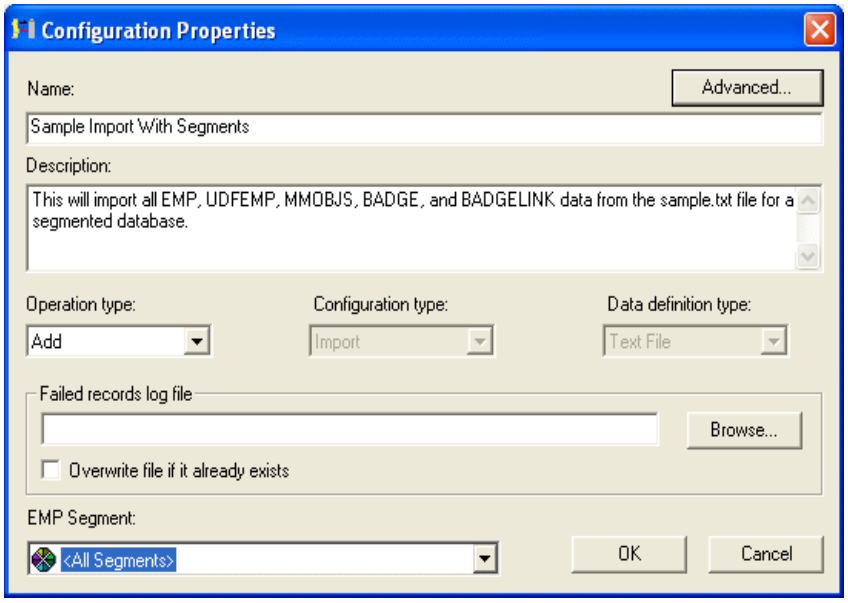
To view the DataExchange Log:

1. Using Windows Explorer, navigate to the **logs** folder in the B.A.S.I.S. installation path (**C:\Program Files\B.A.S.I.S.\logs** by default).
2. Double-click on the **DataExchange.log** file to open it. By default, this file is always appended to. To see the most current results, scroll to the bottom of the file.

Configuration Properties Form

The Configuration Properties form is displayed by either:

- Selecting **New** from the **DataExchange** menu.
- Clicking [New] on the DataExchange Configurations form.
- Selecting **Properties** from the **DataExchange** menu when a configuration is open.
- Clicking the button on the DataExchange Main toolbar when a configuration is open.



Configuration Properties Form

Form element	Comment
Advanced	Opens the Advanced Options form for Configuration Properties.
Name	Provides a unique, descriptive label for a particular configuration.
Description	Provides a description of the configuration. Identifies what the configuration does and helps distinguish it from other configurations.

Configuration Properties Form (Continued)

Form element	Comment
Operation type	Determines the action that will be performed on the data with respect to the database. The **Operation type** cannot be modified after the configuration has been saved. Choices include: • **Add** - The data will be added to the database. If a particular record is already in the database, an error will occur and the record will be rejected. • **Add/Modify** - To avoid confusion, it is recommended that this option be used only when importing data into a single table. If a record in the text file or database exists in the B.A.S.I.S. database, it will be replaced according to the configuration you specify. Records that don't already exist will be added to the database. • **Delete** - To avoid confusion, it is recommended that this option be used only when importing data into a single table. If a record in the text file or database exists in the B.A.S.I.S. database, it will be deleted. Records in the text file or database that don't already exist in the B.A.S.I.S. database will be ignored. • **Modify** - To avoid confusion, it is recommended this option be used only when importing data into a single table. If a record in the text file or database exists in the B.A.S.I.S. database, the record will be modified according to the configuration you specify. Records in the text file or database that don't already exist in the B.A.S.I.S. database will be rejected and placed in the error log file.
Configuration type	Indicates whether the configuration will export data from the B.A.S.I.S. database or import data into the B.A.S.I.S. database. The **Configuration type** cannot be modified after the configuration has been saved. Choices include: • **Import** - Data will be imported to the B.A.S.I.S. database. • **Export** - Data will be exported from the B.A.S.I.S. database.
Data definition type	Indicates the type of data that will be imported or exported. The **Data definition type** cannot be modified after the configuration has been saved. Choices include: • **Database** - Allows import of records from another database; you must be connected to the database you wish to import from. • **Text File** - Allows import of records from either a delimiter separated or fixed length text file. • **XML File** - Allows import of records from an XML file. XML is different than the text file or database options, as you do not map fields. All information about its configuration comes from the properties screen or the XML file itself.
Failed records log file	Contains any records rejected during the import or export. Typically, the file is assigned the "err" extension.
Overwrite file if it already exists	Overwrites the log file when the configuration is executed.
Browse	Displays an Open window from which you can search for where to save the error log file.

Configuration Properties Form (Continued)

Form element	Comment
EMP Segment	Imports/exports the EMP to the selected cardholder segment. **Note:** Cardholder segmentation is enabled in System Administration. From the **Administration** menu select **Segments**. Verify the Segment cardholders check box is selected.
Convert all warnings to errors	Converts all warnings to errors so they can be exported to the failed records log file.
Rollback entire row if error occurs	Fails the entire row if any sub item in the row fails. In a database a *row* is a single line as a result/set generated by defined links (join). In a text file a *row* is all the information in the text line.
OK	Closes the Configuration Properties folder and adds the new configuration to your database.
Cancel	Closes the Configuration Properties folder without saving the configuration.

Configuration Properties Form Procedures

Select the Configuration Properties

1. In FormsDesigner, select **New** from the **DataExchange** menu.
2. The Configuration Properties form opens. In the **Name** field, type a unique, descriptive label for the configuration.
3. In the **Description** field, type a description of the configuration that identifies what the configuration does and helps distinguish it from other configurations.
4. In the **Operation type** field, select the action that will be performed on the data with respect to the database. Note that this option cannot be changed after the configuration has been added.
5. In the **Configuration type** field, select whether the configuration will export data from the B.A.S.I.S. database or import data into the B.A.S.I.S. database. Note that this option cannot be changed after the configuration has been added. For information on the type of DataExchange configurations that can be exported or imported please refer to the DataExchange Configuration Requirements Table on page 92.
6. In the **Data definition type** field, select the type of data that will be imported or exported. Note that this option cannot be changed after the configuration has been added. For information on the type of DataExchange configurations that support text or database information please refer to the DataExchange Configuration Requirements Table on page 92.
7. This step is optional. If you do not want a log of records that fail when a configuration is run, skip this step. Otherwise, click [Browse]. The Save As window opens. In the Save As window:

a. Navigate to the location where the log of failed records will be stored.

b. In the **File name** field, specify a name for the log file. Log files typically have the extension '.err.'

c. Click [Save].

d. If you want the log file to be overwritten whenever the configuration is executed, select the **Overwrite file if it already exists** check box.

8. If your cardholders are not segmented or you are creating an export configuration, skip this step. Otherwise, select the segment that the EMP will be imported from or exported to.

9. Click [OK].

DataExchange Configuration Requirements Table

Configuration Type	Data Definition Type	Can the DataExchange Configuration listed be used?					
		Access Levels	Writeback Action	Increment Expression	Filters	Text File Data Definition	Database Data Definition
Import	Text	Yes	No	Yes	No	Yes	No
	Database	Yes	Yes	Yes	Yes	No	Yes
Export	Text	No	Yes	No	Yes	Yes	No
	Database	No	Yes	No	Yes	No	Yes

Note: Skip Actions, Conditions, Exchange Maps and all other expressions can be used for import or export of text or database information.

Configuration Properties - Advanced Options Form

The Configuration Properties - Advanced Options form is displayed by:

- Clicking [Advanced] in the Configuration Properties form.

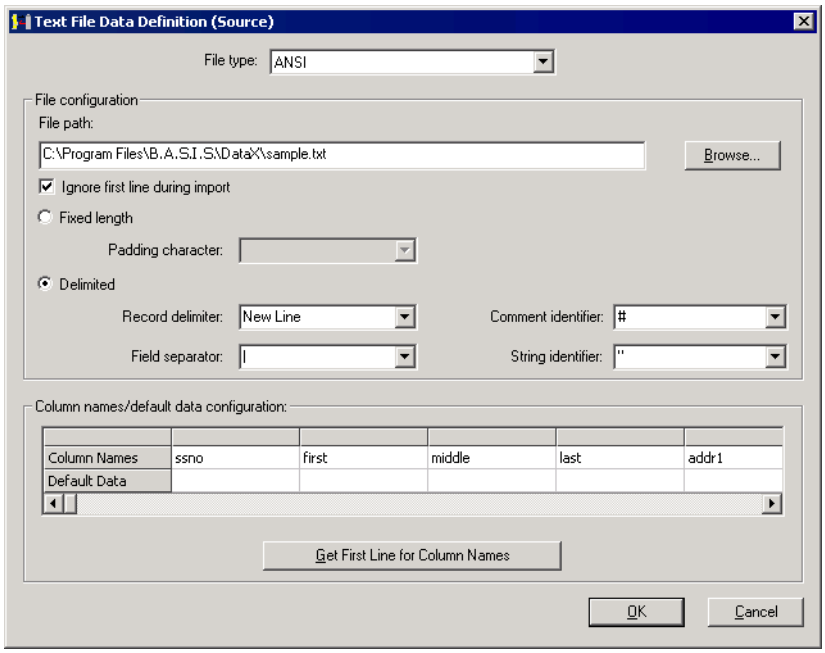
Form element	Comment
Configuration to execute next	Choose what, if any, configuration to run after the current configuration has been executed.
Convert all warnings to errors	Converts all warnings to errors so they can be exported to the failed records log file.
Rollback entire row if error occurs	Fails the entire row if any sub item in the row fails. In a database a *row* is a single line as a result/set generated by defined links (join). In a text file a *row* is all the information in the text line.
OK	Closes the Advanced Options form and changes the configuration as you specified.
Cancel	Closes the Advanced Options form without saving the configuration.

Text File Data Definition Form

The Text File Data Definition Form is displayed by either:

- Clicking [OK] on the Configuration Properties form when adding a new configuration that has text file as the data definition type.
- Selecting **Data Definitions** from the **DataExchange** menu when a DataExchange configuration (with a text file data definition type) is open.
- Clicking the button on the DataExchange Main toolbar when a DataExchange configuration (with a text file data definition type) is

open.



Text File Data Definition Form

Form element	Comment
File type	Displays a list of types of encoding for files. Choices include: • ANSI • Unicode • Unicode big endian If you do not know the type of encoding being used, select **ANSI**. As long as ANSI is selected, the encoding will automatically be changed if it is something different.
File path	Displays the filename and path for the text file.
Browse	Displays an Open window in which you can search for the file that will be used.
Ignore first line during import	Does not import the first line in the text file as a record. This is useful if the first line contains information about the file or column headings.
Fixed length	A *fixed length text file* is one in which a fixed number of characters is allocated to each field.
Padding character	Identifies the character that is used to fill in ("pad") the spaces when a particular field has fewer characters than the specified fixed length.
Comment identifier	Indicates the character that identifies a comment line in the fixed length text file. B.A.S.I.S. ignores comment lines when importing data.
Delimited	A *delimited text file* is one in which each field in a record is separated from the next by the character that is specified by the **Field separator** field.

Text File Data Definition Form (Continued)

Form element	Comment
Record delimiter	Specifies the method used to separate records in the text file. Choices include: • **New Line** - each line in the file represents one record • **Tab -** each tab in the file represents one record
Field separator	Specifies the character used to separate fields within a record in the ASCII file. One commonly used delimiter is "|", which is used in the **Sample.txt** file that ships with B.A.S.I.S. software. You can either type a delimiter here or select one from the list. Use a character that won't appear in the data. Otherwise, B.A.S.I.S. will read the character as a delimiter when it isn't supposed to be, producing erroneous results. **Note:** The <Tab> key is denoted as "\t".
Comment identifier	Indicates the character that identifies a comment line in the delimited text file. B.A.S.I.S. ignores comment lines when importing data.
String identifier	Indicates the character that encloses a literal string in the text file. You need to use a string indentifier/text qualifier only when the data contains the specified **Field separator**. For example, suppose your text file contains first names and last names, uses an apostrophe (') as the delimiter, and uses a caret (^) for the string identifier. You would use the string identifier for a name such as **Cheryl O'Connor**, which would be written **'Cheryl'O^'^Connor'** in the ASCII file. If you didn't indicate that the apostrophe in the last name is part of the name, B.A.S.I.S. would think of it as a delimiter, importing **O** as the last name and **Connor** as the field that follows it in the layout. **Note:** A *string* is a contiguous sequence of symbols or values such as a character string (a sequence of characters) or a binary digit string (a sequence of binary values).
Column names/default data configuration	Sets up column names in the correct order that they appear in the file. To do this, right-click a column in the grid and either move the column, delete the column, or insert a new, empty column before or after the column. To read the specified text file using the settings in the File configuration section, click [Get First Line for Column Names]. Note that this option is not available for an export. • If the correct settings are selected in the File configuration section, the column names and default data should appear correctly in this section. • If they do not, make changes in the File configuration section and click [Get First Line for Column Names] again. Repeat until the column names and default data appear correctly.
Get First Line for Column Names	Displays the first line of data for the columns listed. After the settings have been selected in the File configuration section, click this button. Make changes in the File configuration section and click this button until the column names and default data display correctly.
OK	Saves the text file settings for this configuration.
Cancel	Closes the Text File Data Definition form without modifying the settings for the text file.

Text File Data Definition Form Procedures

Select the Text File Data Definition Options

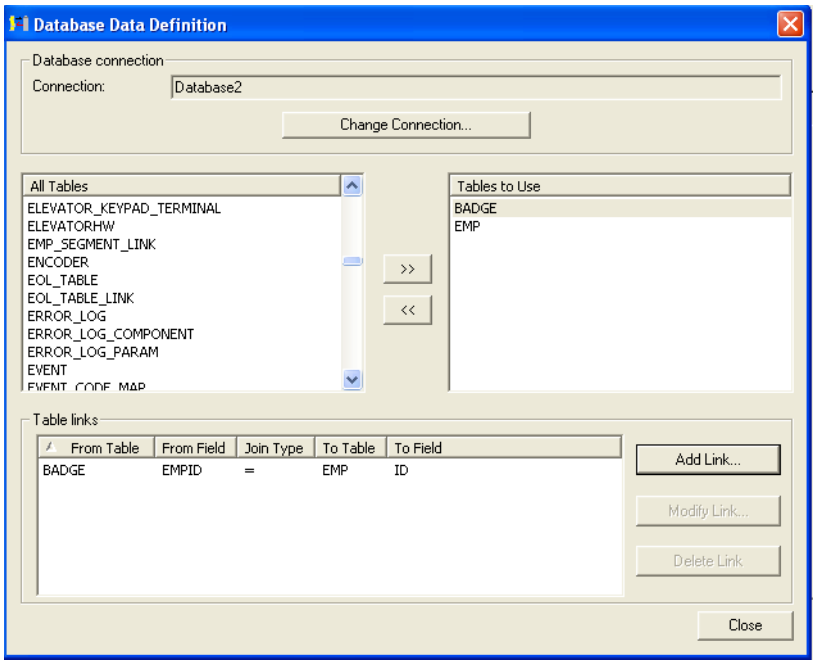
Note: To display this form for an open configuration that has the settings previously specified, select **Data Definitions** from the **DataExchange** menu.

1. In the Text File Data Definition form:
   a. Click [Browse]. The Open window opens.
   b. Navigate to the text file that you wish to use.
   c. With the text file highlighted, click [Open]. The filename and path are displayed in the **File path** field.
2. Select the **Ignore first line during import** check box if you do not wish to import the first line in the text file as a record. This is useful if the first line contains information about the file or column headings.
3. Select whether the text file is fixed length or delimited.
   a. If the file is fixed length (a certain number of characters long):
      1) Select **Fixed Length**.
      2) Select the **Padding character**. This is the character that is used to fill in ("pad") the spaces when a particular field has fewer characters than the specified fixed length.
      3) If needed, enter the value for the Comment identifier.
   b. If the file is delimited:
      1) Select **Delimited**.
      2) Enter/select values for the **Record delimiter**, **Field separator**, **Comment identifier**, and **String identifier**.
4. Click [Get First Line for Column Names].
5. If the column names and default data display correctly, great! If not, change settings in the File configuration section and click [Get First Line for Column Names] again until they do.
6. Click [OK].

Database Data Definition Form

The Database Data Definition form is displayed by selecting **Data Definitions** from the **DataExchange** menu when a configuration is open that has "Database" specified for the **Data definition type**. To specify a configuration with a

"Database" data definition type see Configuration Properties Form Procedures on page 91.



Database Data Definition Form

Form element	Comment
Connection	Displays the file or machine data source that the configuration uses.
Change Connection	Displays the Select Data Source form, where the file and machine data sources are configured.
All tables	Lists all tables in the B.A.S.I.S. database that are available to create links from.
>>	Moves a field that is selected in the All tables listing window to the Tables to use listing window, effectively making it available to create links.
<<	Moves a field that is selected in the Tables to use listing window to the All tables listing window, effectively removing it from the list of tables to create links from.
Tables to use	Lists all tables that have been selected to have links created from.
Table links listing window	Displays links that have been set up between tables. If a link is selected, [Modify Link] and [Delete Link] are enabled.
Add Link	Displays the Set Up Table Link form, where you can select the tables to link together and specify the settings for the link.
Modify Link	Displays the Set Up Table Link form where you can modify the settings for the link. The [Modify Link] button is enabled when a link is selected in the Table links listing window.

Database Data Definition Form (Continued)

Form element	Comment
Delete Link	Deletes the selected link and all items that are using it after prompting for confirmation. For example, consider a configuration in which Lookup1 is mapped to **UDFEMP.TITLE** and Lookup1 uses FileColumn1 as its data. If FileColumn1 is deleted, Lookup1 and the mapping are also deleted. The [Delete Link] button is enabled when a link is selected in the Table links listing window.
Close	Closes the Database Data Definition form.

Database Data Definition Form Procedures

Select the Database Data Definition Options

DataExchange supports import of data from Access, SQL Server Desktop Engine, and Microsoft SQL. “One to Many” relationships are supported where the import schema matches the B.A.S.I.S. schema, i.e., multiple badges per cardholder and multiple access levels per badge.

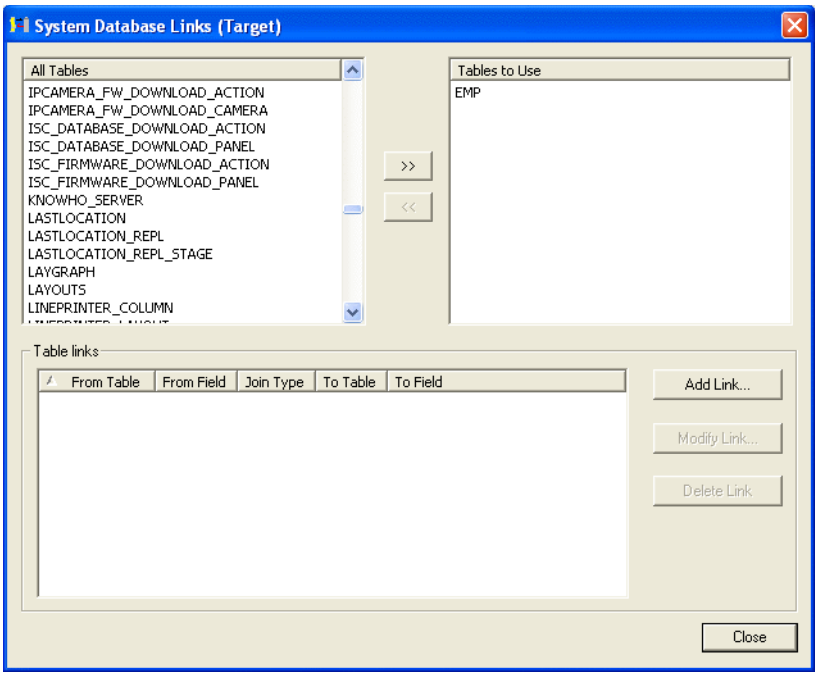
Note: To display this form for an open configuration that has the settings previously specified, select **Data Definitions** from the **DataExchange** menu.

1. In the Database Data Definition form:
   a. Click [Change Connection]. The Select Data Source form opens.
   b. In the Select Data Source form, select an existing DSN or click [New] to add a DSN.
   c. Click [OK].
2. In the All Tables listing window, select a table in the database that you wish to use.
3. Click [>>].
4. Repeat steps 2 and 3 for each table you wish to use.
5. Click [Add Link].The Set Up Table Link form opens. Link the appropriate tables and click [OK]. For more information, refer to Set Up Table Link Form on page 100.
6. Click [Close].

System Database Links Form

The System Database Links form is displayed by either:

- Clicking [OK] on the Text File Data Definition form when adding a new configuration.
- Selecting **System DB Links** from the **DataExchange** menu.



System Database Links Form

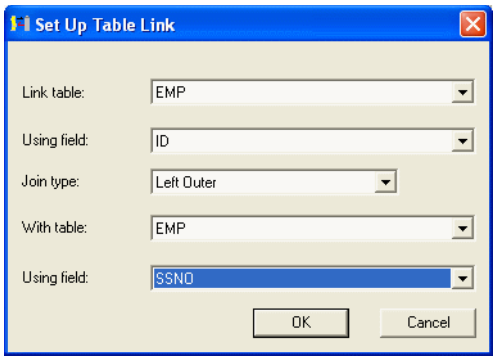
Form element	Comment
All tables	Lists all tables in the B.A.S.I.S. database that are available to create links from.
>>	Moves a field that is selected in the All tables listing window to the Tables to use listing window, effectively making it available to create links.
<<	Moves a field that is selected in the Tables to use listing window to the All tables listing window, effectively removing it from the list of tables to create links from.
Tables to use	Lists all tables that have been selected to have links created from.
Table links listing window	Displays links that have been set up between tables. If a link is selected, the Modify Link and Delete Link listing windows are enabled for selection.
Add Link	Displays the Set Up Table Link form, where you can select the tables to link together and specify the settings for the link.
Modify Link	Displays the Set Up Table Link form where you can modify the settings for the link. The [Modify Link] button is enabled when a link is selected in the Table links listing window.

System Database Links Form (Continued)

Form element	Comment
Delete Link	Deletes the selected link and all items that are using it after prompting for confirmation. For example, consider a configuration in which Lookup1 is mapped to **UDFEMP.TITLE** and Lookup1 uses FileColumn1 as its data. If FileColumn1 is deleted, Lookup1 and the mapping are also deleted. The [Delete Link] button is enabled when a link is selected in the Table links listing window.
Close	Closes the System Database Links form.

Set Up Table Link Form

The Set Up Table Link form is displayed when you click [Add Link] on the System Database Links form. For more information, refer to System Database Links Form on page 99.



Set Up Table Link Form

Form element	Comment
Link table	Identifies the first of two tables that will be linked. All tables that appear in the Tables to use listing window on the System Database Links form are listed and are available for selection.
Using field	Contains the list of all fields in the selected table that is displayed in the **Link table** field. Select a field.

Set Up Table Link Form (Continued)

Form element	Comment
Join type	Compares the two linked tables (when the import or export is executed). Choices include: • **Inner** - Selects the record for import/export if the record in the assigned field in the first table is also found in the second table. For example, EMP inner BADGE means that for every EMP you have a BADGE. • **Left Outer** - Includes all source records. All of the records from the first table and field will be included, even if no matching records from the second table and field are found. For example, EMP left outer BADGE means that every EMP may have a BADGE but doesn't have to. • **Right Outer** - Includes all target records. All of the records from the second table and field will be included, even if no matching records from first table and field are found. For example, EMP right outer BADGE means that every BADGE may have an EMP but doesn't have to.
With table	Identifies the second of two tables that will be linked. All tables that appear in the Tables to use listing window on the System Database Links form are listed and are available for selection.
Using field	Contains the list of all fields in the selected table that is displayed in the **With table** field. Select a field.
OK	Saves the table link with the settings specified.
Cancel	Closes the Set Up Table Link form without changing the table link's properties.

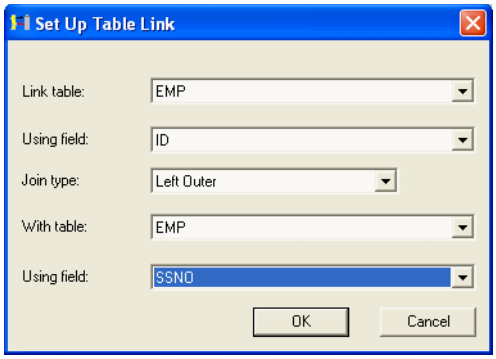
Database Links Procedure

Configure the Database Links

Note: To display the System Database Links form, select **System DB Links** from the **DataExchange** menu.

1. In the System Database Links form:
   a. Select a table you wish to use in the All tables listing window:
   b. Click the button. The table is now listed in the Tables to Use listing window.
   c. Repeat steps a and b for each table you want to use.
   d. Click [Add Link].

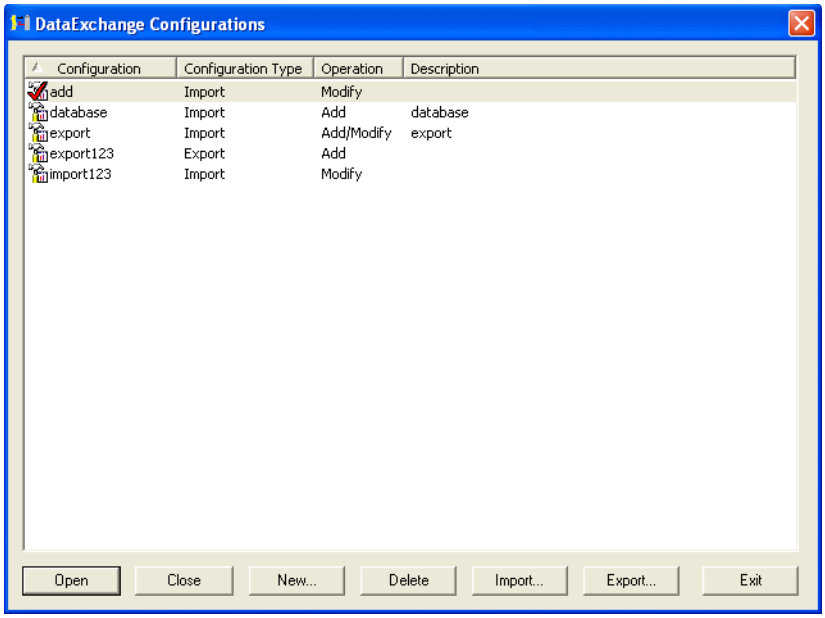
2. The Set Up Table Link form opens.
   a. In the **Link table** drop-down list, select the table that contains the field you wish to link.
   b. In the **Using field** drop-down list, select the field in the specified table that you wish to link.
   c. Select the **Join type** for the link.
   d. In the **With table** drop-down list, select the table to link to.
   e. In the **Using field** drop-down list, select the field in the specified table that you wish to link.
   f. Click [OK].



3. Click [Close].

DataExchange Configurations Form

The DataExchange Configurations form is displayed by selecting **Open** from the **DataExchange** menu.



DataExchange Configurations Form

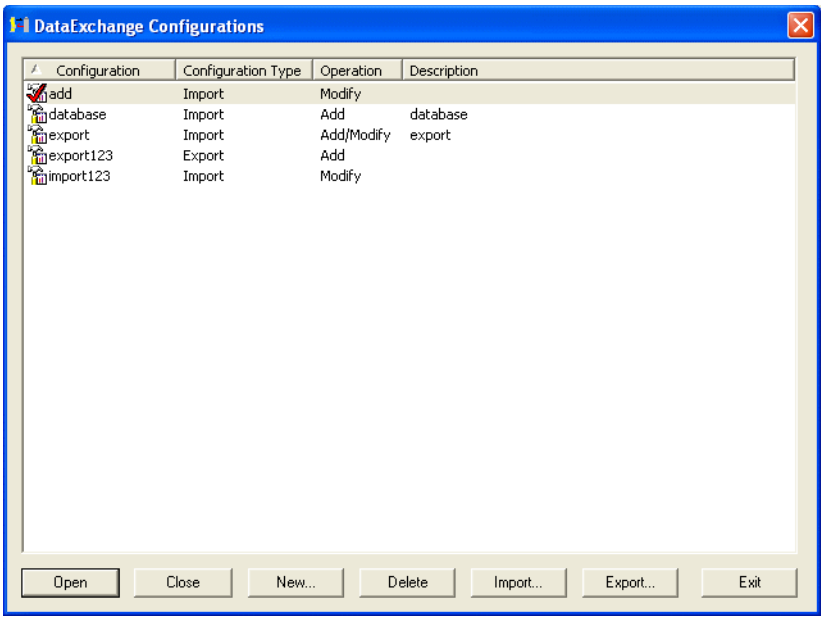
Form element	Comment
Configuration listing window	Lists all configurations in the database you are logged into.
Open	Opens the selected configuration. Only one configuration can be open at a time.
Close	Closes the selected configuration if it is open. If the selected configuration is not open the close button is dimmed.
New	Opens the Configuration Properties form, where a new configuration can be added.
Delete	Deletes the selected configuration after prompting for confirmation.
Import	Allows a configuration file to be imported. **Note:** Import, in this case, refers to importing a DataExchange configuration file, not importing cardholder data.
Export	Allows a configuration file to be exported. **Note:** Export, in this case, refers to exporting a DataExchange configuration file, not exporting cardholder data.
Exit	Closes the DataExchange Configurations form without opening a configuration.

DataExchange Configurations Form Procedures

Open/Close a DataExchange Configuration

Only one DataExchange configuration can be open at a time. If you open a second configuration, the first open automatically closes.

1. In FormsDesigner, select **Open** from the **DataExchange** menu.
2. The DataExchange Configurations form opens. In the Configuration listing window, select the configuration you wish to open or close.



3. Click [Open] or [Close].

Data Exchange Sample Scripts

B.A.S.I.S. ships with sample DataExchange configuration files. The files are located in the B.A.S.I.S. installation path in the **DataX** folder (**C:\Program Files\B.A.S.I.S.\DataX** by default).

To use the sample scripts, refer to Import a DataExchange Configuration on page 105.

File name	Description
x86_DESampleExport.dec	For Windows 32-bit operating systems, the file that contains a sample DataExchange configuration that exports all EMP, UDFEMP, MMOBJS, BADGE and BADGELINK data into a **SampleExport.txt** file.

File name	Description
x64_DESampleExport.dec	For Windows 64-bit operating systems, the file that contains a sample DataExchange configuration that exports all EMP, UDFEMP, MMOBJS, BADGE and BADGELINK data into a **SampleExport**.**txt** file.
x86_DESampleImport.dec	For Windows 32-bit operating systems, the file that contains a sample DataExchange configuration that imports all EMP, UPDEMP, MMOBJS, BADGE and BADGELINK non-segmented data from the **sample**.**txt** file.
x64_DESampleImport.dec	For Windows 64-bit operating systems, the file that contains a sample DataExchange configuration that imports all EMP, UPDEMP, MMOBJS, BADGE and BADGELINK non-segmented data from the **sample**.**txt** file.
x86_DESegmentedSampleImport.dec	For Windows 32-bit operating systems, the file that contains a sample DataExchange configuration that imports and exports all EMP, UDFEMP, MMOBJS, BADGE and BADGELINK segmented data into a **SampleExport.txt** file, and from the **sample**.**txt** file.
x64_DESegmentedSampleImport.dec	For Windows 64-bit operating systems, the file that contains a sample DataExchange configuration that imports and exports all EMP, UDFEMP, MMOBJS, BADGE and BADGELINK segmented data into a **SampleExport.txt** file, and from the **sample**.**txt** file.
sample.txt	File that contains sample data and is an example of a way that data can be structured so it can be imported into the B.A.S.I.S. database using DataExchange.

Delete a DataExchange Configuration

1. In FormsDesigner, select **Open** from the **DataExchange** menu.
2. The DataExchange Configurations form opens. In the Configuration listing window, click on the configuration you wish to delete.
3. Click [Delete].
4. Click [Yes] to confirm the deletion. The configuration is deleted and removed from the Configuration listing window.

Import a DataExchange Configuration

FormsDesigner supports the ability to import segmented and non-segmented databases.

1. In FormsDesigner, select **Open** from the **DataExchange** menu.
2. Click [Import].
3. The Open window displays. In the Open window:
   a. Navigate to the location where the DataExchange configuration or sample script is saved. (For more information on sample scripts, refer to Data Exchange Sample Scripts on page 104)
   b. Click on the name of the configuration file to select it.

Note: The exchange format is XML, although DataExchange configuration files have a ".dec" extension by default.

c. Click [Open].

4. The configuration will be added to the Configuration listing window.

Export a DataExchange Configuration

A DataExchange configuration can be exported. This is very useful because after you create an import or export DataExchange configuration you could save it to a floppy disk or e-mail it to another site.

1. In FormsDesigner, select **Open** from the **DataExchange** menu.
2. In the Configuration listing window, select the name of the configuration you want to export.
3. Click [Export].
4. The Save As window opens. In the Save As window:
   a. Navigate to the location where you wish to save the DataExchange configuration.
   b. In the **File name** field, enter a name for the configuration.

Note: The exchange format is XML, although DataExchange configuration files have a ".dec" extension by default.

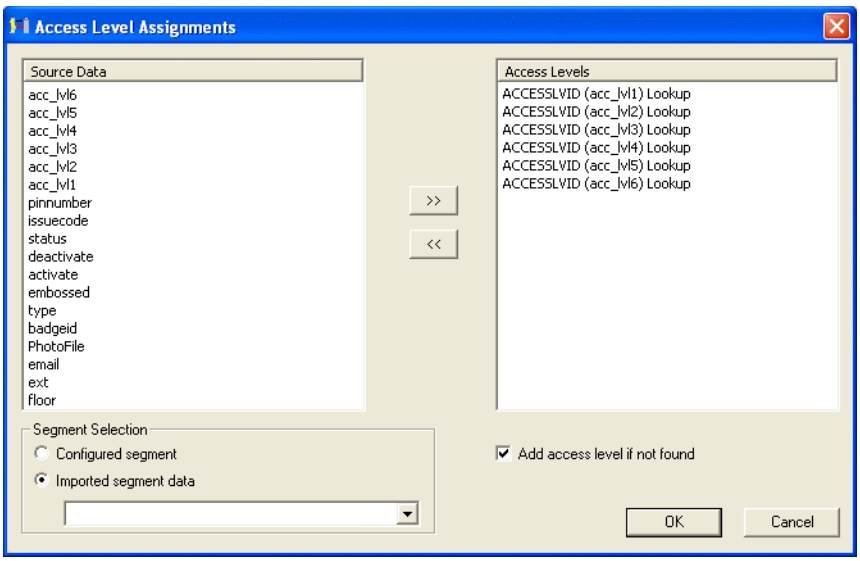
c. Click [Save].

Access Level Assignments Form

The Access Level Assignments form can only be displayed when an import configuration is open. To open an import configuration select **Open** from the **DataExchange** menu. Select the appropriate configuration. Be sure to verify its configuration type is an import.

To display the Access Level Assignments form:

- Select **Access Levels** from the **DataExchange** menu (when a DataExchange configuration is open that has **Import** as the configuration type).
- Click the button on the DataExchange Main toolbar (when a DataExchange configuration is open that has **Import** as the configuration type).



Access Level Assignments Form

Form element	Comment
Source data listing window	Displays the data in the source that is available to be imported as an access level. Select the source data you wish to use as an access level, then click the >> button.
>>	Moves a field that is selected in the Source data listing window to the Access levels listing window, effectively making it an access level.
<<	Moves a field that is selected in the Access levels listing window to the Source data listing window, effectively removing it from the list of access levels.
Access levels listing window	Displays all source data that will become access levels when the configuration is executed.
Add access level if not found	Adds access levels that do not already exist when the import is run. This option is only used if access levels are being imported as text.

Access Level Assignments Form (Continued)

Form element	Comment
Configured segment	Indicates access levels are being imported as text. If your database is segmented, you must specify the segment the access levels will be added to. If selected, choose the appropriate segment in the drop-down list beneath the **Imported segment** option.
Imported segment data	Indicates that the segment data is in the text file that will be imported. The segment data could be the name of a segment or ID of a segment already in the database. Segments will NOT be added if they don't already exist. If selected, choose the segment from the source data that is listed in the drop-down list beneath the **Imported segment** option.
OK	Saves the specified access level assignments for the configuration.
Cancel	Closes the Access Level Assignments form without changing specified access level assignments.

Access Level Assignments Form Procedures

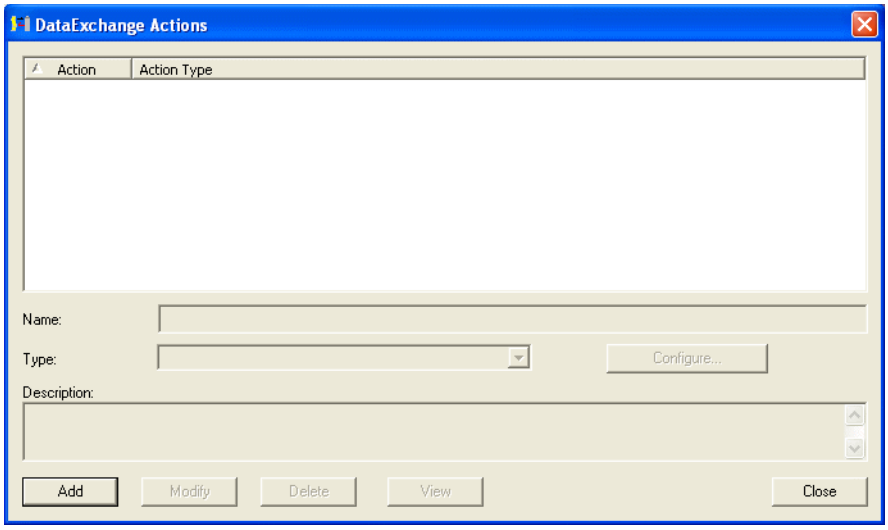
Configure Access Level Assignments

1. In FormsDesigner, select **Access Levels** from the **DataExchange** menu.
2. The Access Level Assignments form opens. On the Access Level Assignments form:
   a. In the Source data listing window, select the source data that you want to become an access level when the configuration is executed.
   b. Click the button. The selected source data will be added to the Access levels listing window.
   c. Repeat steps a and b for each piece of source data that you want to become an access level.
   d. Select the **Add access level if not found** check box if you want an access level that doesn't exist to be added when the configuration is executed. If segmentation is enabled, also specify whether the segment for the access level will be an B.A.S.I.S. configured segment or an imported segment.
   e. Click [OK].

DataExchange Actions Form

The DataExchange Actions form is displayed by either:

- Selecting **Actions** from the **DataExchange** menu when a configuration that has a database as the source is open.
- Clicking the button on the DataExchange Main toolbar when a configuration that has a database as the source is open.



Form element	Comment
Action listing window	Displays all action records and the action type associated with each.
Name	Provides a descriptive, unique name for the action.
Type	Choices include: • **Copy Access Level Assignments -** The copy access level assignments action can be used to copy access level assignments from the most recently modified badge belonging to the cardholder to the badge being added. Optionally, by configuring the action, you can copy the current PIN code from the most recently modified badge belonging to the cardholder to the badge being added. • **Writeback** - The writeback action is available for import/export configurations that use a database as the source and database-to-database configurations. As records are imported/exported, DataExchange writes data back to the source database and marks a specific column with a value. For a writeback to work, a primary key must be defined for the table you are writing back to. • **Skip** - The skip action is available for import and export configurations that use any type of source data (field, string, blob, etc.) As records are imported/exported, DataExchange skips an entire row if an action is true. • **SQL Post-Execution** - A user written SQL action that begins after configuration is run. • **SQL Pre-Execution -** A user written SQL action that begins before configuration is run.

Form element	Comment
Configure	Displays either the Writeback form or the Skip form. The type of form that displays depends on the action type selected.
Description	Displays a read-only summary of the configuration settings. The description is automatically filled in after the action has been configured.
Add	Makes the form editable so an action record can be added.
Modify	Puts the DataExchange Actions form into Modify mode so the currently selected action can be modified.
Delete	Deletes the selected action and all items that are using it after prompting for confirmation.
Close	Closes the DataExchange Actions form.

Overview of Actions

An *action* is what you want to do to your source data given a certain condition. B.A.S.I.S. ET693 supports two actions: Writeback and Skip. To add a writeback action, the source must be a database, not a text file. A writeback action writes information back to the database that you're importing or exporting from. For a writeback to work, a primary key must be defined on the table you are writing back to.

To add a skip action, the source can be a database or a text file. The skip action skips an entire row of data if the condition is true. Skip actions can be used for importing or exporting data.

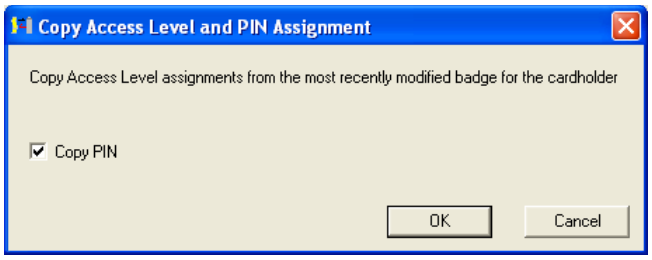
Copy Access Level Assignments

Copy Access Level Assignments actions can be used to:

- Copy access level assignments from the most recently modified badge belonging to the cardholder to the badge being added.
- Copy the current PIN code from the most recently modified badge belonging to the cardholder to the badge being added.

The Copy Access Level and PIN Assignment form is displayed by clicking the [Configure] button on the DataExchange Actions form when the Type selected is

"Copy Access Level Assignments." For more information, refer to DataExchange Actions Form on page 108.


Copy Access Level and PIN Assignment
Copy Access Level assignments from the most recently modified badge for the cardholder
Copy PIN
OK
Cancel

Copy Access Level and PIN Assignment Form

Form element	Comment
Copy PIN	Select to copy the current PIN code from the most recently modified badge belonging to the cardholder to the badge being added.

Add a Copy Access Level Assignments Action

1. Select Open from the DataExchange menu. Select the appropriate configuration and click the [Open] button.
2. In FormsDesigner, select Actions from the DataExchange menu.
3. The DataExchange Actions form opens. Click the [Add] button.
   a. In the Name field, specify a unique, descriptive name for the action.
   b. In the Type field, select Copy Access Level Assignments.
   c. Click the [Configure] button.
4. The Copy Access Level Assignments form opens. Select the type of operation you want to perform.
5. Click the [OK] button and then the [Close] button to close the DataExchange Actions form.
6. Save the DataExchange Expression. For more information, refer to Save a DataExchange Configuration on page 86.
7. If you wish to run a DataExchange configuration, refer to Run a DataExchange Configuration on page 87.

Note: Note: You do not map the fields the skip action applies to during import/export.

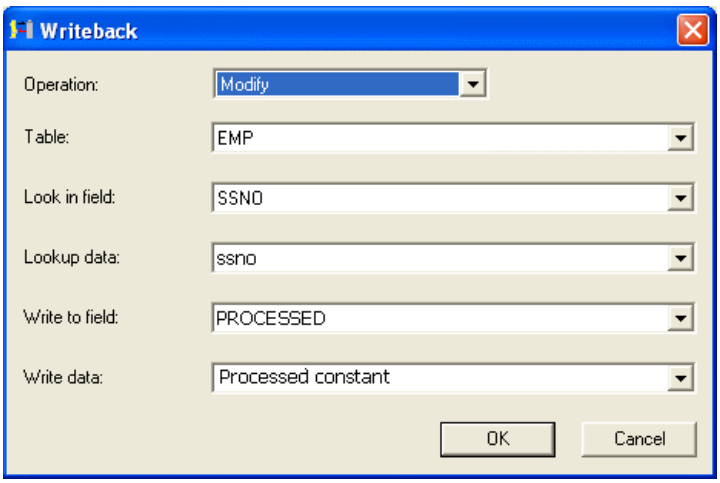
Writeback Action

Writeback actions can be used to:

- Get a status when exporting from one database to another. For example, every time a record is added to the B.A.S.I.S. database, the status can be written back to your old database. If you want to know which records are being added, you might have a separate field in your database called "Done." You can write back to the "Done" field and add a 1 whenever a record is imported into the B.A.S.I.S. database. Using this approach, you can go back later and see exactly what records were processed.
- Delete a record if it has been added to the B.A.S.I.S. database.

The Writeback form is displayed by clicking [Configure] on the DataExchange Actions form when the **Type** selected is "Writeback." For more information, refer to DataExchange Actions Form on page 108.

Note: In the example below, the "Processed constant" in the **Write data** drop-down list refers to a constant expression whose value is 1.



Writeback Form

Form element	Comment
Operation	Choices include: • **Add** - The data will be added to the database. • **Modify** - If a record in the text file or database exists in the B.A.S.I.S. database, the record will be modified according to the configuration you specify. Records in the text file or database that don't already exist in the B.A.S.I.S. database will be rejected and placed in the error log file. • **Delete** - If a record in the text file or database exists in the B.A.S.I.S. database, it will be deleted. Records in the text file or database that don't already exist in the B.A.S.I.S. database will be ignored.
Table	Displays a list of all tables in the source database that are available for selection. Select a table.

Writeback Form (Continued)

Form element	Comment
Look in field	Displays the list of all fields in the selected table that is displayed in the **Table** field. Select a field that uniquely identifies a record. This field is not used when "Add" is selected in the **Operation** field.
Lookup data	Displays the data that uniquely identifies the record. This field is not used when "Add" is selected in the **Operation** field.
Write to field	Displays the field in the database that data is written back to. This field is not used when "Delete" is selected in the **Operation** field.
Write data	Displays the data that gets written back to the source database. This field is not used when "Delete" is selected in the **Operation** field. **Note:** In the example shown, the "Processed constant" refers to a constant expression whose value is 1.
OK	Configures the action and closes the Writeback form.
Cancel	Closes the Writeback form without changing the action's settings.

Add a Writeback Action

1. Select **Open** from the **DataExchange** menu. Select the appropriate configuration and click [Open]. For more information, refer to Open/Close a DataExchange Configuration on page 104.
2. In FormsDesigner, select **Actions** from the **DataExchange** menu.
3. The DataExchange Actions form opens. Click [Add].
   a. In the **Name** field, specify a unique, descriptive name for the action.
   b. In the **Type** field, select **Writeback**.
   c. Click [Configure].
4. The Writeback form opens. Select the type of operation you want to perform. The fields that are enabled for selection on this form depend on this setting.
   a. Select values for all fields that are not grayed out.
   b. Click [OK] to accept the settings.
5. Click [OK] and then [Close] to close the DataExchange Actions form.
6. Save the DataExchange Expression. For more information, refer to Save a DataExchange Configuration on page 86.
7. If you wish to run a DataExchange configuration, refer to Run a DataExchange Configuration on page 87.

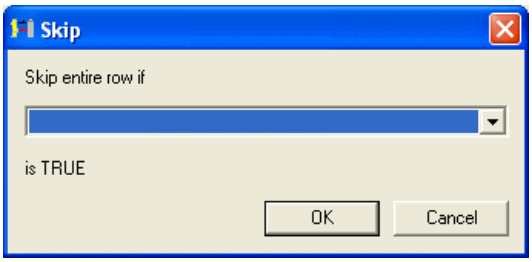
Note: You do not map the fields the writeback action applies to during import/export.

Skip Action

Skip actions can be used to:

- Selectively import/export data.
- Skip a record if it has already been added to the B.A.S.I.S. database.

The Skip form is displayed by clicking [Configure] on the DataExchange Actions form when the **Type** selected is "Skip." For more information, refer to DataExchange Actions Form on page 108.



Field	Description
Skip entire row if _____ is TRUE	Lists available conditions. You can also select **New Condition** to create to create a new condition.
OK	Closes the form and applies the changes.
Cancel	Closes the form without applying any changes

Add a Skip Action

1. Select **Open** from the **DataExchange** menu. Select the appropriate configuration and click [Open]. For more information, refer to Open/Close a DataExchange Configuration on page 104.
2. Verify the condition you will be selecting for the skip action exists.
3. Select **Actions** from the **DataExchange** menu.
4. The DataExchange Actions form opens. Click [Add].
   a. In the **Name** field, specify a unique, descriptive name for the action.
   b. In the **Type** field, select **Skip**.
   c. Click [Configure].
5. The Skip form displays. Select the condition you want to incorporate into the skip action.
6. Click [OK] to accept the settings.
7. Click [OK] and then [Close] to close the DataExchange Actions form.
8. Save the DataExchange Expression. For more information, refer to Save a DataExchange Configuration on page 86.
9. If you wish to run a DataExchange configuration, refer to Run a DataExchange Configuration on page 87.

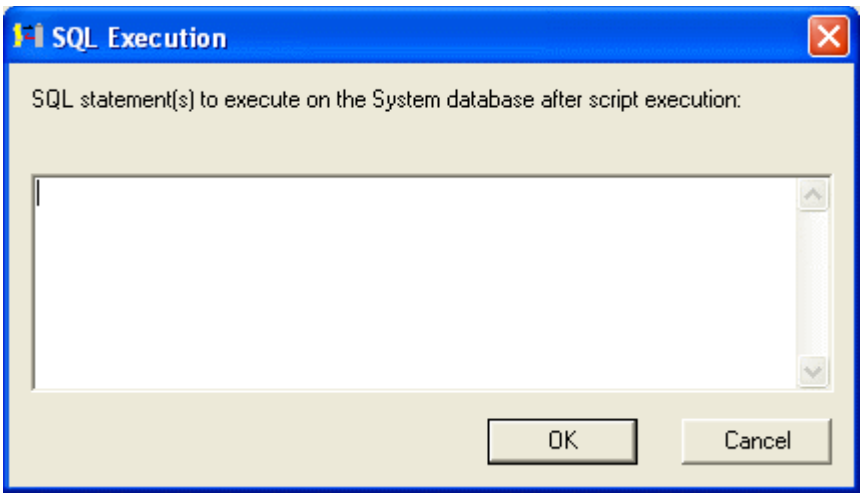
Note: You do not map the fields the skip action applies to during import/export.

SQL Post-Execution Action

SQL post-execution actions can be used to:

- Run a user written SQL that will run after configuration takes place.

The SQL post-execution form is displayed by clicking [Configure] on the DataExchange Actions form when the **Type** selected is "SQL Post-Execution." For more information, refer to DataExchange Actions Form on page 108.



Field	Description
OK	Closes the form and applies the changes.
Cancel	Closes the form without applying any changes

Add a SQL Post-Execution Action

1. Select **Open** from the **DataExchange** menu. Select the appropriate configuration and click [Open]. For more information, refer to Open/Close a DataExchange Configuration on page 104.
2. Select **Actions** from the **DataExchange** menu.
3. The DataExchange Actions form opens. Click [Add].
   a. In the **Name** field, specify a unique, descriptive name for the action.
   b. In the **Type** field, select SQL Post-Execution.
   c. Click [Configure].
4. The SQL Execution form displays. Write the SQL action you want to run after configuration starts.

5. Click [OK] to accept the settings.
6. Click [OK] and then [Close] to close the DataExchange Actions form.

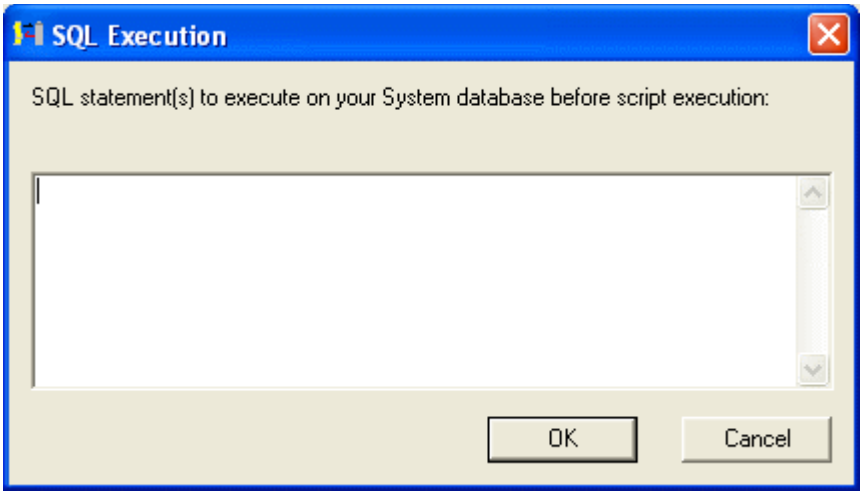
Save the DataExchange Expression. For more information, refer to Save a DataExchange Configuration on page 86.

SQL Pre-Execution Action

SQL pre-execution actions can be used to:

- Run a user written SQL that will run before configuration takes place.

The SQL pre-execution form is displayed by clicking [Configure] on the DataExchange Actions form when the **Type** selected is "SQL Pre-Execution." For more information, refer to DataExchange Actions Form on page 108.



Field	Description
OK	Closes the form and applies the changes.
Cancel	Closes the form without applying any changes

Add a SQL Pre-Execution Action

1. Select **Open** from the **DataExchange** menu. Select the appropriate configuration and click [Open]. For more information, refer to Open/Close a DataExchange Configuration on page 104.
2. Select **Actions** from the **DataExchange** menu.
3. The DataExchange Actions form opens. Click [Add].
   a. In the **Name** field, specify a unique, descriptive name for the action.
   b. In the **Type** field, select SQL Pre-Execution.
   c. Click [Configure].

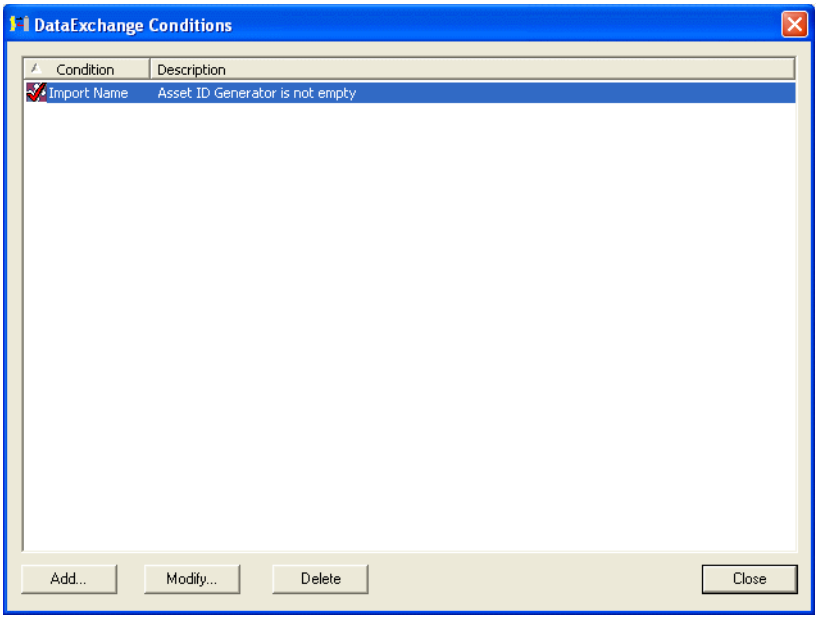
4. The SQL Execution form displays. Write the SQL action you want to run before configuration starts.
5. Click [OK] to accept the settings.
6. Click [OK] and then [Close] to close the DataExchange Actions form.

Save the DataExchange Expression. For more information, refer to Save a DataExchange Configuration on page 86.

DataExchange Conditions Form

The DataExchange Conditions form is displayed by either:

- Selecting **Conditions** from the **DataExchange** menu when a configuration is open.
- Clicking the button on the DataExchange Main toolbar when a configuration is open.



DataExchange Conditions Form

Form element	Comment
Condition listing window	Displays all condition records and a description of each.
Add	Displays the Condition Editor form so that a condition can be added.
Modify	Opens the Condition Editor form for the condition. The current settings are displayed and can be modified.
Delete	Deletes the selected condition and all items that are using it after prompting for confirmation.

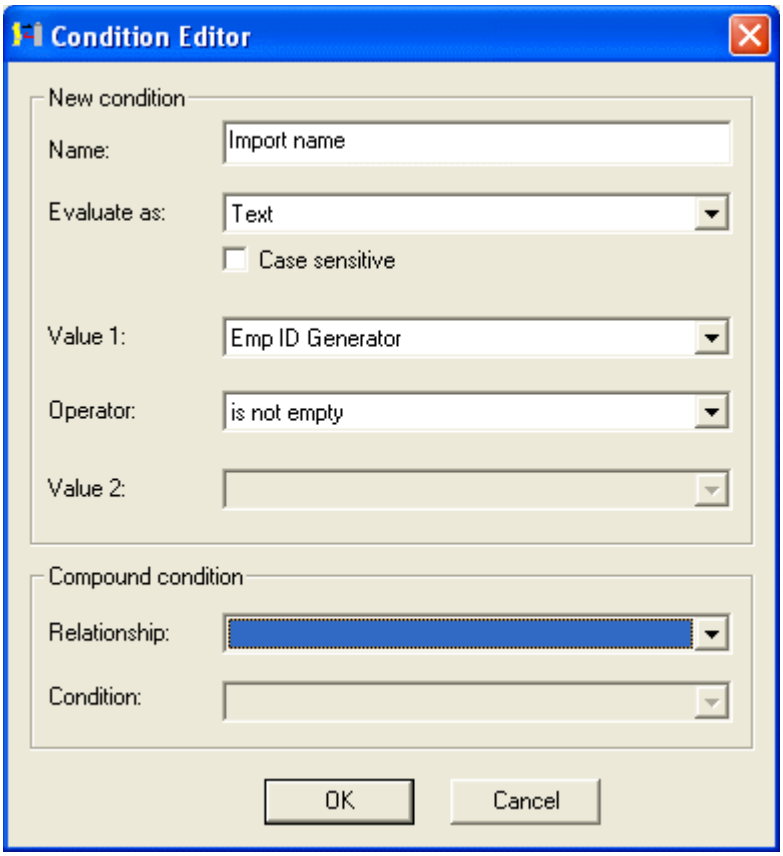
DataExchange Conditions Form (Continued)

Form element	Comment
Close	Closes the DataExchange Conditions form.

Condition Editor Form

The DataExchange Conditions form is displayed when [Add] on the DataExchange Conditions form is clicked. For more information, refer to DataExchange Conditions Form on page 117.

The DataExchange Conditions form is also displayed when you select **New Condition** in the Conditional Expressions form. For more information, refer to Condition Editor Form on page 117.



Condition Editor Form

Form element	Comment
Name	Provides a unique, descriptive name for the condition.
Evaluate as	Identifies the type of information in the conditions that will be compared. Choices include date, memo (blob), number, real, and text

Condition Editor Form (Continued)

Case sensitive	Makes the comparison of text information case sensitive. This check box is only enabled for selection when "Text" is selected in the **Compare as** drop-down list. If selected, **Value 1** and **Value 2** must have the same case. This means that uppercase and lowercase letters must match.
Value 1	Identifies the first system expression to compare. Choices include all source data. **Note:** These values are the same values that are available on the Import Configuration form in the **Source data** drop-down list. The Import Configuration form is displayed by right-clicking on a field on a FormsDesigner form.
Operator	Determines how **Value 1** and **Value 2** will be compared. Choices include: • **!=, does not equal** - If a record is found in which the assigned field is greater than or less than the given value, the record is selected for import/export. A record is not selected if the value in the field is equal to the given value. • **<, less than** - If a record is found in which the value of the assigned field is less than the given value, the record is selected for import/export. If the value in a record is greater than or equal to the given value, the record is not selected for import/export. • **<=, less than or equal** - If a record is found in which the assigned field is less than or equal to the given value, the record is selected for import/export. If the value is less than the given value, the record is not selected for import/export. • **=, equals** - If a record is found in which the assigned field is equal to the given value, the record is selected for import/export. • **>, greater than** - If a record is found in which the value of the assigned field is greater than the given value, the record is selected for import/export. If the value is less than or equal to the given value, the record is not selected for import/export. • **>=, greater than or equal** - If a record is found in which the assigned field is greater than or equal to the given value, the record is selected for import/export. If the value is less than the given value, the record is not selected for import/export. • **is empty** - If a record is found in which the assigned field is empty, the record is selected for import/export. If selected, "Text" should be selected in the Compare as field. • **is not empty** - If a record is found in which the assigned field is not empty, the record is selected for import/export. If selected, "Text" should be selected in the Compare as field.
Value 2	Identifies the second system expression to compare. Choices include all source data. **Note:** These values are the same values that are available on the Import Configuration form in the **Source data** drop-down list. The Import Configuration form is displayed by right-clicking on a field on a FormsDesigner form.

Condition Editor Form (Continued)

Relationship	Identifies the relationship of the compound condition. A *compound condition* means the condition is linked to another condition, such as Condition 1 AND Condition 2. If the condition is not linked to another condition, fields in this section can be left blank. Refer to the the Compound Relationships Table table on page 120 for a list of all the possible compound relationships and the resulting statement. Choices include: **AND** - implies if condition A and B are true then the whole statement is true, any other situation is false. In other words, in order for the whole statement to be true every condition must be true. **AND NOT** - is the inverse of the AND relationship. If condition A and B are true then the whole statement is false. **OR** - implies if condition A or B is true then the whole statement is true, any other situation is false. **OR NOT** - is the inverse of the OR relationship. If condition A or B is true then the whole statement is false. **XOR** - implies if both conditions are true or if both conditions are false then the whole statement is false. **XOR NOT** - is the inverse of the XOR relationship. If both conditions are true or if both conditions are false then the whole state is true.
Condition	Displays the linked condition. Select "<New Condition>" to enter another condition or select an existing one.
OK	Adds the condition and closes the Condition Editor form.
Cancel	Closes the Condition Editor form without changing the condition's settings.

Compound Relationships Table

If Condition A is	Relationship	If Condition B is	Then the whole statement is
True	AND	True	True
True	AND	False	False
False	AND	True	False
False	AND	False	False
True	AND NOT	True	False
True	AND NOT	False	True
False	AND NOT	True	True
False	AND NOT	False	True
True	OR	True	True

Compound Relationships Table (Continued)

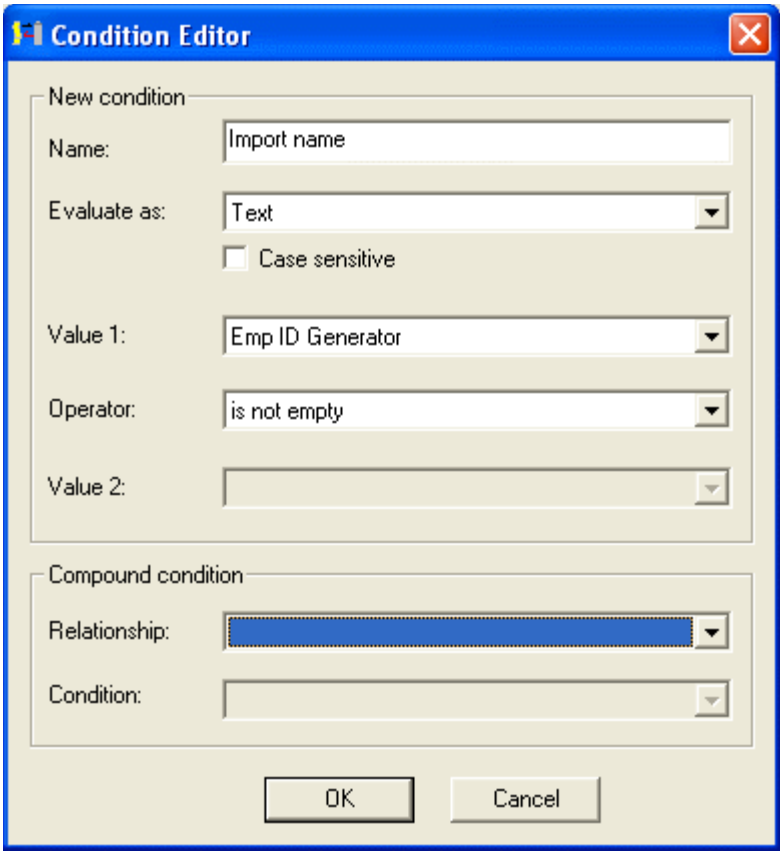
If Condition A is	Relationship	If Condition B is	Then the whole statement is
True	OR	False	True
False	OR	True	True
False	OR	False	False
True	OR NOT	True	False
True	OR NOT	False	False
False	OR NOT	True	False
False	OR NOT	False	True
True	XOR	True	False
True	XOR	False	True
False	XOR	True	True
False	XOR	False	False
True	XOR NOT	True	True
True	XOR NOT	False	False
False	XOR NOT	True	False
False	XOR NOT	False	True

DataExchange Condition Procedures

Add a Condition

1. In FormsDesigner, select **Conditions** from the **DataExchange** menu.
2. On the DataExchange Conditions form, click [Add].

3. The Condition Editor form opens. Type a name for the condition and select appropriate values in the New condition section.



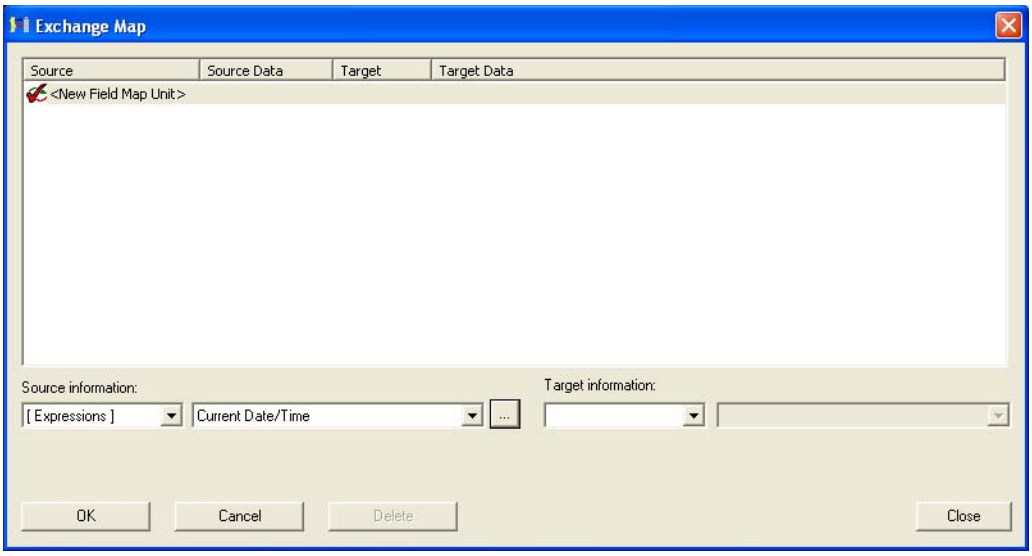
4. If this condition will be linked to another condition, select a **Relationship** and **Condition** in the Compound condition section. If not, skip this step.
5. Click [OK].
   - If you did not select values in the Compound condition section, the condition is added to the Condition listing window on the DataExchange Conditions form.
   - If you selected "<New Condition>" in the **Condition** field, a new Condition Editor form opens. Repeat steps 3 though 5 until all conditions that are linked together are added.

Exchange Map Form

The Exchange Map form is displayed by either:

- Selecting **Exchange Map** from the **DataExchange** menu when a configuration is open.

- Clicking the button on the DataExchange Main toolbar when a configuration is open.



Exchange Map Form

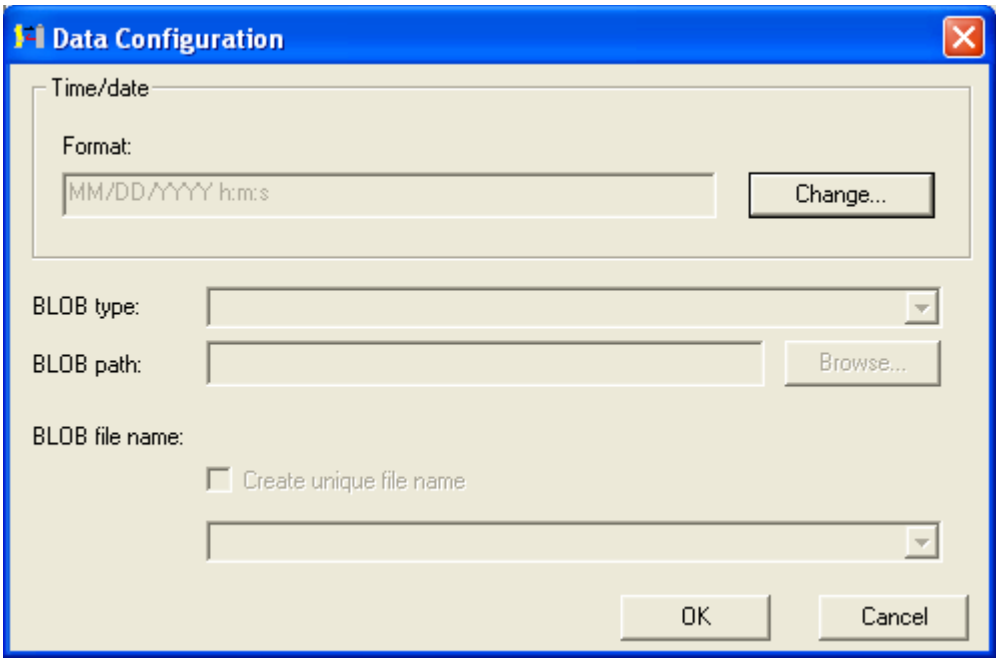
Form element	Comment
Exchange map listing window	If the "<New Field Map Unit>" entry is selected, a new mapping between B.A.S.I.S. database fields and data and expressions can be created. If an entry is selected in the Exchange map listing window, the **Source information** and **Target information** fields display the information for the entry.
Source information (field 1)	Identifies whether the source information will come from a file, a database table, or an expression. **Note:** If the "<New Field Map Unit>" entry is selected and an item is selected in this field, a new mapping between B.A.S.I.S. database fields and data and expressions can be created.
Source information (field 2)	Displays information available in the source. For example, if you select "File" in the first source information drop-down list, data in the file will be listed. Select the desired piece of data.
...	Displays only for a mapping that goes to a date/time field or a photo field. If clicked, the Data Configuration form opens, where you can configure the time/date or BLOB photo path.
Target information (field 1)	Identifies the target database table for an import configuration, or "File" for a file export configuration.
Target information (field 2)	Displays a list of items that the selected source information can be mapped to. • For an import configuration, select a field in the target table. • For a file export configuration, select the column of data. These are the same columns that are specified on the Text File Data Definition (Target) form in the Column names/default data configuration section.
Key Field	Displays only if the open configuration has an **Operation type** that is anything but "Add." It is used to determine your keys. At least one key field is required on each table in a modify or delete configuration, but there are no restrictions for an add/modify configuration. A key field is used to uniquely identify a record that will be updated. Without key fields defined, multiple records could potentially be erroneously modified or even deleted.
Clear if empty	Displays only if the open configuration has an **Operation type** of "Modify" or "Add\Modify." Identifies if the data currently in the target field will be removed during modification of the record if the source data is NULL or an empty string. When the **Clear if empty** check box is not selected (default), the field in the record being modified is not updated during modification if the source data is NULL or an empty string.
OK	Saves the exchange map specified.
Cancel	Closes the Exchange Map form without saving the current settings or any changes that were made
Delete	Deletes the currently selected exchange map entry.
Close	Closes the Exchange Map form.

Overview of the Exchange Map Form and Data Mapping

The Exchange Map form is used to map the B.A.S.I.S. database fields to data and expressions in a configuration. For example:

Data	→	Table.Field
File.Column 1	→	Table 1.Field 1
File.Column 2	→	Table 1.Field 2
Expression.Lookup 1	→	Table 1.Field 3
File.Column 3	→	Table 2.Field 1

Data Configuration Form



Data Configuration Form

Form element	Comment
Format	Displays the date and time format if the selected mapping goes to a date/time field. To change the **Format**, click [Change].
Change	Displays the Date/Time Configuration form, in which you can set how dates and times are interpreted.
BLOB path	Displays the filename and path of the saved image files if the selected mapping goes to a photo field. To select where the images are located for an import or will be saved for an export, click [Browse].

Data Configuration Form (Continued)

Form element	Comment
Browse	Displays a Browse for Folder form, in which you can search for where the images are saved for an import, or will be saved for an export.
BLOB type	Displays only for a mapping in an import configuration that has a date/time field or photo field specified for the target data. Choices for the type of BLOB include photo, signature, or raw data.
OK	Saves the data configuration settings specified.
Cancel	Closes the Data Configuration form without saving the current settings or any changes that were made.

Exchange Map and Data Configuration Procedures

Display the Data Configuration Form

Toolbar shortcut

1. In FormsDesigner select **Exchange Map** from the **DataExchange** menu, or click the Exchange Map toolbar button.
2. Select **Expressions** from the first Source information drop-down list.
3. Select **Current Date/Time** from the second Source information drop-down list. The icon [...] button displays.
4. Click the icon [...] button.

Notes: The **BLOB type** field is only displayed for an import configuration.

A *BLOB* is an acronym for binary large object and is a collection of binary data stored as a single entity in database management systems. *BLOBs* are used primarily to hold images, videos or sound.

Map Fields in a Configuration - Advanced Method

The advanced method of mapping the fields is the only way to import to the Visits form. This method requires that you have a clear understanding of the B.A.S.I.S. database layout. If you are not familiar with the B.A.S.I.S. database layout, refer to Map Fields in a Configuration - Simple Method on page 84.

1. In FormsDesigner, select **Exchange Map** from the **DataExchange** menu.
2. The Exchange Map form opens. In the Exchange Map form:
   a. Click the “<New Field Map Unit>” entry in the Source listing window.
   b. In the first source information drop-down list, select where the source information will come from, such as a file, a database table or an expression.

c. In the second source information drop-down list, information available in the source will be displayed. For example, if you select “File” in the first source information drop-down list, data in the file will be listed. Select the desired piece of data.

d. If the source data is from an expression and you selected a date/time or photo field in an import configuration, the [...] button appears after the source information fields. Click the [...] button. The Data Configuration form opens. On the Data Configuration form:

1) The options that need to be configured depend on whether the configuration is for import or export and whether the source data is a date/time field or a photo field.

If the source data is a date/time field, the format for the date and time is displayed and the [Change] button is enabled. To change the **Format**, click [Change].

If the source data is a photo field, the **BLOB path** field is enabled. The filename and path for where the image files are saved must be specified. Click [Browse] to select where the images are located for an import, or will be saved for an export.

If the source data is a photo field and the configuration is an import configuration, the **BLOB type** field is enabled. Select whether the BLOB is a photo, signature, or raw data.

2) Click [OK].

e. In the first target information drop-down list, select a target database table for an import configuration, or “File” for a file export configuration.

f. In the second target information drop-down list, choose what the selected source information will be mapped to.

– For an import configuration, select a field in the target table.

– For a file export configuration, select the column of data. These are the same columns that are specified on the Text File Data Definition (Target) form in the Column names/default data configuration section.

g. If the open configuration has an **Operation type** that is anything but “Add”, the **Key Field** check box is displayed. Select this check box if the field in the second target information drop-down list will be used to determine your keys. At least one key field is required on each table in a modify or delete configuration, but there are no restrictions for an add/modify configuration. A key field is used to uniquely identify a record that will be updated. Without key fields defined, multiple records could potentially be erroneously modified or even deleted.

h. Click [OK].

i. If the source data is from a file and you selected a date/time or photo field in an import configuration, the Data Configuration form opens.

Note: To change these properties after the mapping has been added, click the [...] button that appears after the source information fields.

On the Data Configuration form:

1) The options that need to be configured depend on whether the configuration is for import or export and whether the source data is a date/time field or a photo field.

   If the source data is a date/time field, the format for the date and time is displayed and the [Change] button is enabled. To change the **Format**, click [Change].

   If the source data is a photo field, the **BLOB path** field is enabled. The filename and path for where the image files are saved must be specified. Click [Browse] to select where the images are located for an import, or will be saved for an export.

   If the source data is a photo field and the configuration is an import configuration, the **BLOB type** field is enabled. Select whether the BLOB is a photo, signature, or raw data.

2) Click [OK].

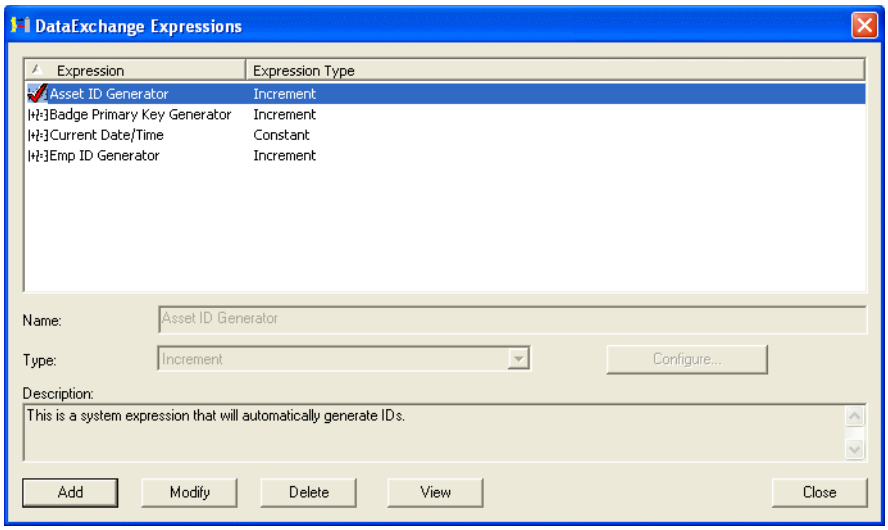
3. Click [Close] to close the DataExchange Expressions form.
4. Save the DataExchange Expression. For more information, refer to Save a DataExchange Configuration on page 86.
5. If you wish to run a DataExchange configuration, refer to Run a DataExchange Configuration on page 87.

DataExchange Expressions Form

The DataExchange Expressions form is displayed by either:

- Selecting **Expressions** from the **DataExchange** menu when a configuration is open.

- Clicking the button on the DataExchange Main toolbar when a configuration is open.



DataExchange Expressions Form

Form element	Comment
Expression listing window	Displays a list of all expressions including default expressions and those that have been added.
Name	Provides a unique, descriptive label for a particular expression.

DataExchange Expressions Form (Continued)

Form element	Comment
Type	Indicates the type of expression. Expressions can be parts of other expressions. For examples of each of these types please refer to the appropriate expressions. Choices include: • **Arithmetic** - Performs basic arithmetic using two strings. You can add, subtract, divide or multiply the numeric strings. For more information, refer to Arithmetic Expression Form on page 133. • **Conditional** - Evaluates a comparison between two pieces of data to either a true or false result, and based on that, returns one or the other piece of configured user data. For more information, refer to Conditional Expressions Form on page 135. • **Constant** - Allows the user to import/export data that doesn't change, such as "5" or "Employee." • **Flattener** - Transposes multiple columns into one row. In other words, treats several data units as one data unit. • **Increment** - Increments by a user-defined numeric value each time data is imported/exported. • **Lookup** - Queries the database with data that is provided by the user and returns the result. • **Multi-Lookup** - Queries the database with multiple data units provided by the user and returns the result which can be one or several data units. • **Number Conversion** - Imports or exports numeric data and converts it to decimal, binary, hexadecimal or octagonal numbers. • **String Concatenation** - Combines (concatenates) two data units together for import or export to a single field. • **String Conversion** - Converts all the characters in a string to upper or lowercase characters, or reverses the characters in a string, or removes the leading or trailing with-space characters from a string. • **String Extraction** - Extracts or pulls a portion of data from a string. You can extract the right, middle or left part of a string. You can also extract a substring containing only the characters found in a character set or extract a substring containing everything but the characters in a character set. • **String Search** - Finds a character or the first matching character inside a string and returns a numeric value (zero-based) identifying where the character is located or where the substring starts. You can also count the number of characters in a string and return a numeric value.
Configure	Opens a form that allows you to configure an expression. The form displayed depends on the value that is selected in the **Type** drop-down list. **Note:** This button is only available when the DataExchange Expressions form is in Add or Modify mode.
Description	Displays a description of the expression. This description is automatically filled in and cannot be changed.
Add	Puts the DataExchange Expressions form into Add mode so a new expression can be added.
Modify	Puts the DataExchange Expressions form into Modify mode so the currently selected expression can be modified. System expressions cannot be modified.

DataExchange Expressions Form (Continued)

Form element	Comment
Delete	Deletes the selected expression and all items that are using it after prompting for confirmation.
Close	Closes the DataExchange Expressions form.

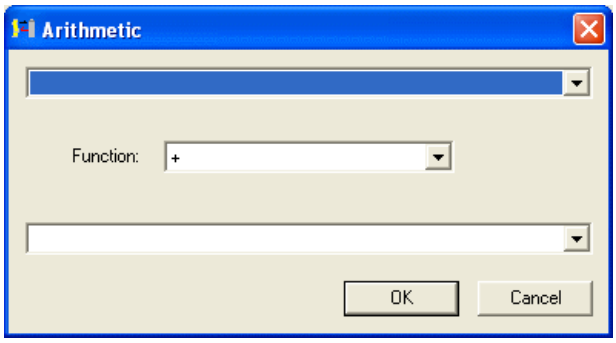
Overview of Data Expressions

Data expressions use queries to search source material (databases, tables, fields, etc.) for specific information and return information in an organized manner.

In B.A.S.I.S. you can use expressions as a way to identify what data to import or export. When a Data Expression is executed, data can be imported into the cardholder database or exported from the cardholder database to another database, table, or file.

B.A.S.I.S. ET693 supports arithmetic, conditional, constant, incremental, lookup, number conversion, string concatenation, string conversion, string extraction, and string search expressions.

Arithmetic Expression Form

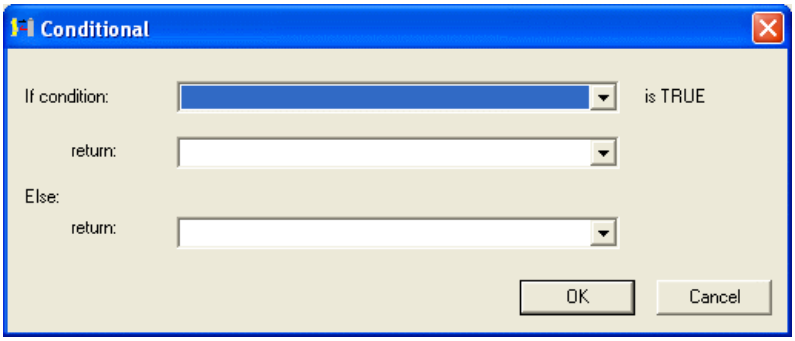


Field	Description
Source data	Lists the numeric data that will be edited.
Function	Lists the arithmetic procedure to perform. Choices include add, subtract, multiply and divide.
Source data	Lists the numeric value that will be applied to the field name. Typically this is a constant expression.
OK	Closes the from and applies the changes made.
Cancel	Closes the form without applying any changes.

Add an Arithmetic Expression

1. Determine whether you will be importing or exporting the arithmetic expression. Select **Open** from the **DataExchange** menu. Select the appropriate configuration and click [Open]. For more information, refer to Open/Close a DataExchange Configuration on page 104.
2. Verify any constant expression you may need (to create an arithmetic expression) is available. To create a constant expression refer to Add a Constant Expression on page 134.
3. Select **Expressions** from the **DataExchange** menu.
4. The DataExchange Expression form opens. Click [Add].
5. In the **Name** field, type a unique, descriptive name for the expression.
6. In the **Type** drop-down list, select **Arithmetic**.
7. Click [Configure].
8. The Arithmetic form opens. Select the source data from the first drop-down box.
9. Select the arithmetic function from the **Function** drop-down list.
10. Select the source data (in number format) in the second drop-down list.
11. Click [OK] to accept the settings.
12. Click [OK] and then [Close] to close the DataExchange Expressions form.
13. Map the fields that the arithmetic expression will be applied to during import or export. For more information, refer to Map Fields in a Configuration - Simple Method on page 84.
14. Save the DataExchange Expression. For more information, refer to Save a DataExchange Configuration on page 86.
15. If you wish to run a DataExchange configuration, refer to Run a DataExchange Configuration on page 87.

Conditional Expressions Form



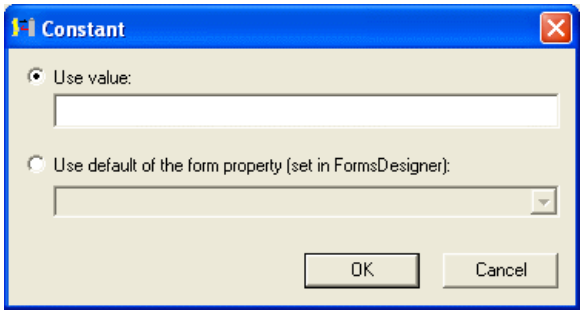
Field	Description
If condition is TRUE	Lists the Conditional Expression that will be applied. If the conditional expression does not exist, select **New Condition** from the drop-down list and create it.
return	Lists the data that will be imported/exported if the condition is true.
Else return	Lists the data that will be imported/exported if the condition is false.
OK	Closes the form and applies the changes made.
Cancel	Closes the form without applying any changes.

Add a Conditional Expression

1. Determine whether you will be importing or exporting the arithmetic expression. Select **Open** from the **DataExchange** menu. Select the appropriate configuration and click [Open]. For more information, refer to Open/Close a DataExchange Configuration on page 104.
2. Select **Expressions** from the **DataExchange** menu.
3. The DataExchange Expression form opens. Click [Add].
4. In the **Name** field, type a unique, descriptive name for the expression.
5. In the **Type** drop-down list, select **Conditional**.
6. Click [Configure].
7. The Conditional form opens. Select a condition from the drop-down list. If you need to create a new condition refer to Add a Condition on page 121.
8. In the second drop-down list select the source data you want to imported/exported if the condition is true.
9. In the third drop-down list select the source data you want imported/exported if the condition is false.
10. Click [OK] to accept the settings.
11. Click [OK] and then [Close] to close the DataExchange Expressions form.
12. Map the fields that the conditional expression will be applied to during import/export. For more information, refer to Map Fields in a Configuration - Simple Method on page 84.

13. Save the DataExchange Expression. For more information, refer to Save a DataExchange Configuration on page 86.
14. If you wish to run a DataExchange configuration, refer to Run a DataExchange Configuration on page 87.

Constant Expressions Form



Field	Description
Use value	Use any character (number, letter, string or symbol) that you enter as a constant value during import/export. Constant expressions can also be used to create arithmetic expressions, extraction expressions, string conversion, extraction and search expressions.
Use default of the form property (set in FormsDesigner)	Uses the default value from any object (Last Name, badge ID, etc.) on any form (asset, cardholder, visit, visitor). The default value is configured in the Object Properties form, Field Settings form/tab, Default field. For more information, refer to Object Properties Folders on page 47.
OK	Closes the form and applies the changes.
Cancel	Closes the form without applying any changes.

Add a Constant Expression

1. Determine whether you will be importing or exporting the constant expression. Select **Open** from the **DataExchange** menu. Select the appropriate configuration and click [Open]. For more information, refer to Open/Close a DataExchange Configuration on page 104.
2. Select **Expressions** from the **DataExchange** menu.
3. The DataExchange Expression form opens. Click [Add].
4. In the **Name** field, type a unique, descriptive name for the expression.
5. In the **Type** drop-down list, select **Constant**.
6. Click [Configure].
7. The Constant form opens. Either select the **Use value** radio button and enter a string or select the **Use default of the form property (set in FormsDesigner)**.

8. Click [OK] to accept the settings.
9. Click [OK] and then [Close] to close the DataExchange Expressions form.
10. Map the fields that the constant expression will be applied to during import/export. For more information, refer to Map Fields in a Configuration - Simple Method on page 84.
11. Save the DataExchange Expression. For more information, refer to Save a DataExchange Configuration on page 86.
12. If you wish to run a DataExchange configuration, refer to Run a DataExchange Configuration on page 87.

Flattener Expression Form

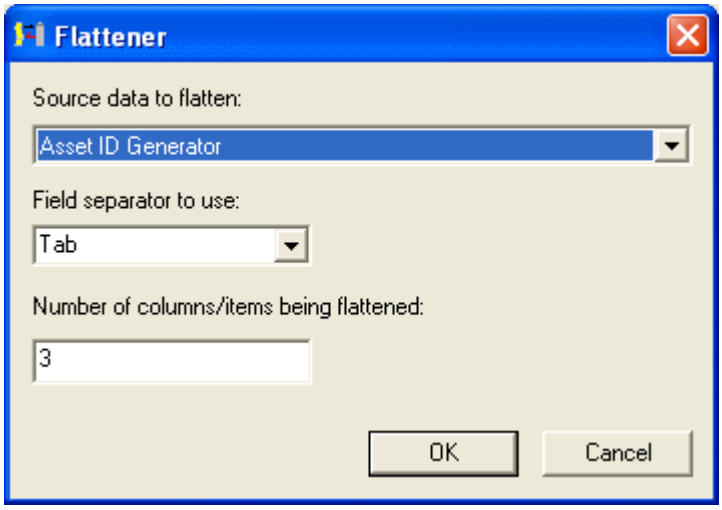
The Flattener Expression is typically used to export data but can be used to import data as well. The Flattener expression treats several data units as one data unit.

Lets say for example, you want to export cardholder information including cardholder name, badge ID and access level. If a cardholder has multiple access levels you can use the flattener expression to flatten the cardholder's access levels into one data unit. Each access level will be separated by a field separator such as a tab.

Notes: If the target definition is text, the field separator used in the flattener expression should be the same field separator used to define the text file

data. For more information, refer to Text File Data Definition Form on page 93.

If the target definition is a database then the field separator can be any character.



Field	Description
Source data to flatten	Typically the source data is a multiple lookup expression although it can be anything, including a field, string, blob, action, etc.
Field separator to use	Enter the character(s) that will separate each unit of data. If your target definition is a text file the field separator should be the same field separator specified when you configured the text file definition. For more information, refer to Text File Data Definition Form on page 93.
Number of columns/items being flattened	Enter the number of columns that will be flattened into one row. If you do not know the number of columns available, enter a zero (do not leave this field blank). If you enter a number less than the actual number of columns available the returned data truncates the number of columns. For example if there are 20 access level columns and you enter 10 as the number of columns to truncate, the first 10 access levels will be flattened into one row of data. Conversely, if you enter a number greater then the actual number of columns available the returned data adds blank columns separated by the field separators to make up the difference.
OK	Closes the form and applies the changes.
Cancel	Closes the form without applying any changes.

Add a Flattener Expression

1. Determine whether you will be importing or exporting the flattener expression. Select **Open** from the **DataExchange** menu. Select the appropriate configuration and click [Open]. For more information, refer to Open/Close a DataExchange Configuration on page 104.
2. Select **Expressions** from the **DataExchange** menu.
3. The DataExchange Expression form opens. Click [Add].
4. In the **Name** field, type a unique, descriptive name for the expression.

5. In the **Type** drop-down list, select **Flattener**.
6. Click [Configure].
7. The Flattener Expression form opens. Select the source data from the drop-down list.
8. Select the record delimiter to use.

Important: If you are importing or exporting to a text file you should use the same field separator used to define the text file data.

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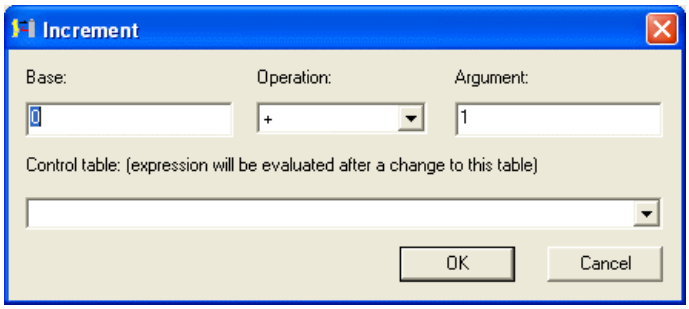
9. Enter the number of columns that will be flattened into one row of data. If you do not know leave this field blank.
10. Click [OK] to accept the settings.
11. Click [OK] and then [Close] to close the DataExchange Expressions form.
12. Map the fields that the increment expression will be applied to during import. For more information, refer to Map Fields in a Configuration - Simple Method on page 84.
13. Save the DataExchange Expression. For more information, refer to Save a DataExchange Configuration on page 86.
14. If you wish to run a DataExchange configuration, refer to Run a DataExchange Configuration on page 87.

Increment Expressions Form

Increment expressions are only available for imports.

An increment expression changes the value of data each time it is imported. For example if you configure a base value of “0” and increment by “2” with control table “EMP” then every cardholder imported the first time will have a value of

"0". The second time the data is imported, every cardholder will have a value of "2" and the third time a value of "4".



Field	Description
Base	Identifies the numeric starting point. Enter a number; this field does not require a numeric constant expression.
Operation	Identifies the mathematical operation that the base is incremented by. The number can be added to, subtracted from, multiplied by, or divided by.
Argument	Identifies the number that will be added, subtracted, multiplied, or divided to the base.
Control table	Lists the table containing the field the Increment expression will be applied to. Anytime the table is updated the data is incriminated.
OK	Closes the form and applies the changes.
Cancel	Closes the form without applying any changes.

Add an Increment Expression

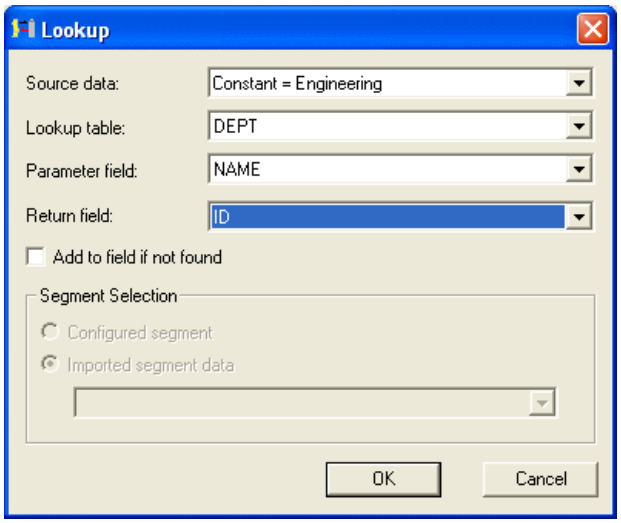
1. Select **Open** from the **DataExchange** menu. Select the appropriate import configuration and click [Open]. For more information, refer to Open/Close a DataExchange Configuration on page 104.
2. Select **Expressions** from the **DataExchange** menu.
3. The DataExchange Expression form opens. Click [Add].
4. In the **Name** field, type a unique, descriptive name for the expression.
5. In the **Type** drop-down list, select **Increment**.
6. Click [Configure].
7. The Increment form opens. Enter the base value (number).
8. Enter the mathematical operation that the number will be added/subtracted/multiplied/divided against.
9. Enter the argument value (number).
10. Select a table from the drop-down list.
11. Click [OK] to accept the settings.
12. Click [OK] and then [Close] to close the DataExchange Expressions form.

13. Map the fields that the increment expression will be applied to during import. For more information, refer to Map Fields in a Configuration - Simple Method on page 84.
14. Save the DataExchange Expression. For more information, refer to Save a DataExchange Configuration on page 86.
15. If you wish to run a DataExchange configuration, refer to Run a DataExchange Configuration on page 87.

Lookup Expressions Form

Lookups are mainly used for access levels and drop-down lists in FormsDesigner. In rare instances, lookups can be configured to add records to a lookup table if a value is not found.

For example, if user data contains a department name such as “Engineering”, but to import a record, department ID is needed. The user can configure a lookup on the DEPT table with NAME as a source field and ID as a return field. A lookup with “Engineering” will return “2” (a dept. ID).



Field	Description
Source data	Lists information that you are searching for. This can be anything, including a field, string, blob, etc.
Lookup table	Lists the table the source data is located in.
Parameter field	Lists the field you want to query. Choices include all the fields available for the selected Lookup table. A *field* is the smallest unit of information you can access and is also referred to as a database column. An example of a parameter field is “NAME”.
Return field	Lists the field you want for output data. Choices include all the fields available for the selected Lookup table. A *field* is the smallest unit of information you can access and is also referred to as a database column. An example of a return field is “ID”.

Field	Description
Add to field if not found	Adds the source data to the lookup table if the value is not found in the parameter field. For example if you are looking for “Engineering” in the table “DEPT” and it is not found, “Engineering” will be added to the table and the new ID returned. **Note:** This check box is only available for imports.
Configured segment	Indicates access levels are being imported as text. If your database is segmented, you must specify the segment the access levels will be added to. If selected, choose the appropriate segment in the drop-down list beneath the **Imported segment** radio button. **Note:** This radio button is available only when the lookup table is ACCLVL and the **Add to field if not found** check box is selected.
Imported segment data	Indicates that the segment data will be imported as a Segment ID. Segments will NOT be added if they don’t already exist. If selected, choose the segment from the source data that is listed in the drop-down list beneath the **Imported segment** radio button. **Note:** This radio button is available only when the lookup table is ACCLVL and the **Add to field if not found** check box is selected.
OK	Closes the form and applies the changes.
Cancel	Closes the form without applying any changes.

Add a Lookup Expression

1. Determine whether you will be importing or exporting the extracted expression. Select **Open** from the **DataExchange** menu. Select the appropriate configuration and click [Open]. For more information, refer to Open/Close a DataExchange Configuration on page 104.
2. Select **Expressions** from the **DataExchange** menu.
3. The DataExchange Expression form opens. Click [Add].
4. In the **Name** field, type a unique, descriptive name for the expression.
5. In the **Type** drop-down list, select **Lookup**.
6. Click [Configure].
7. The Lookup form opens. Select the Source data from the drop-down list.
8. In the Lookup table drop-down list, select the table the source data is associated with.
9. Select the Parameter field from the drop-down list. The parameter field is the field you want queried.
10. Select the Return field from the drop-down list. This is the field of data you want imported/exported.
11. Select the **Add to field if not found** check box if you want the return field data imported even if the field is not found. Meaning the field will be added.

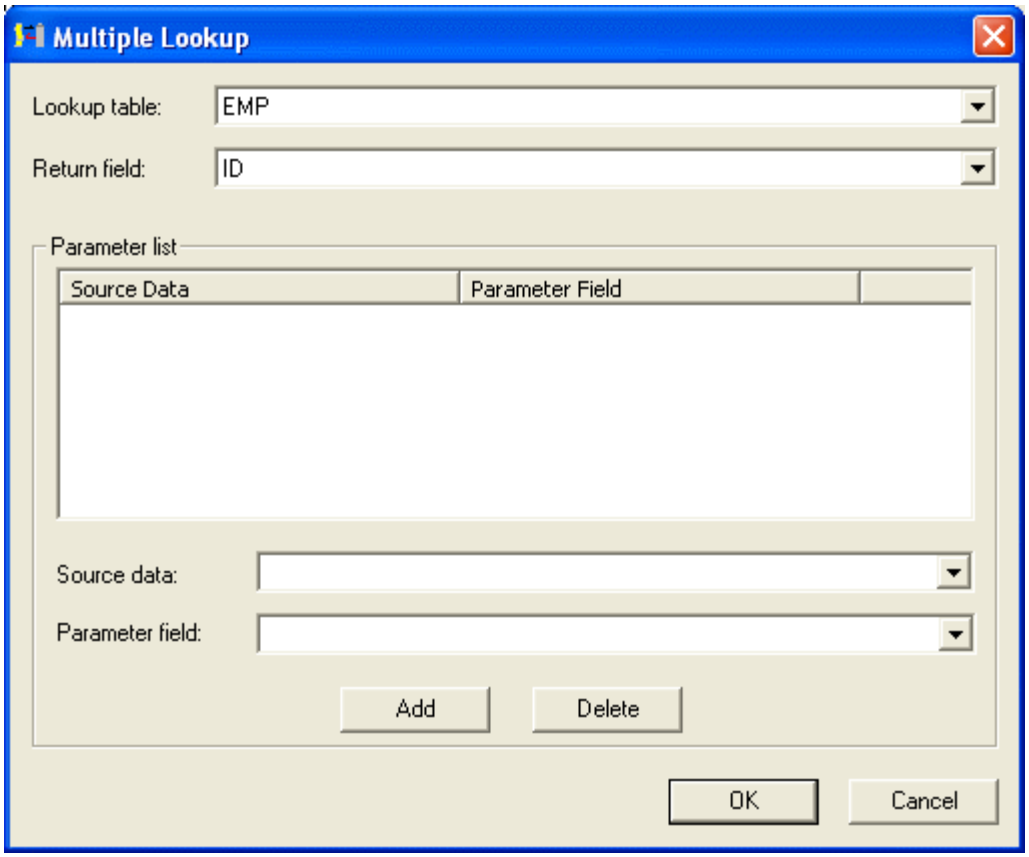
12. Select the **Configured segment** radio button if the access level lookup table is in an B.A.S.I.S. segmented database. If the data source is segmented but not an B.A.S.I.S. database, select the **Imported segment data** radio button and select the data source from the drop-down list.
13. Click [OK] to accept the settings.
14. Click [OK] and then [Close] to close the DataExchange Expressions form.
15. Map the fields that the arithmetic expression will be applied to during import/export. For more information, refer to Map Fields in a Configuration - Simple Method on page 84.
16. Save the DataExchange Expression. For more information, refer to Save a DataExchange Configuration on page 86.
17. If you wish to run a DataExchange configuration, refer to Run a DataExchange Configuration on page 87.

Multiple Lookup Expression Form

The Multiple Lookup Expression form is similar to the Lookup form in that it allows you to lookup or search an item in a table and return a field. However, the Multiple Lookup Expression form allows you to search one or more items in the same table and return multiple fields.

For example you could use the EMP (employee) table to lookup a cardholder's first and last name. If both of items are found, return the cardholder's badge ID. If either item is not found, no value is returned. If by chance there are duplicate

first and last names found (i.e. two John Doe's found) then both names are returned.

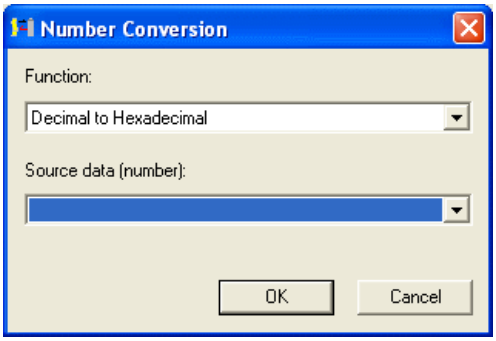


Field	Description
Lookup table	Lists the table the source data is located in.
Return field	Lists the field you want for output data (the field you want returned). Choices include all the fields available for the selected Lookup table. A *field* is the smallest unit of information you can access and is also referred to as a database column. An example of a return field is "ID".
Parameter list	Lists the information (source data and parameter field) you are searching for. These items are added to the parameter list when the source data and parameter field are populated and [Add] is clicked. To remove selected items click [Delete].
Source data	Lists the information you can search for. This can be anything found in the lookup table including a field, string, blob, expression, action, etc.
Parameter field	Lists the field the source data is located in. Choices include all the fields available for the selected Lookup table.
Add	Adds the source data and parameter field to the parameter list.
Delete	Deletes the source data and parameter field from the parameter list.
OK	Closes the form and applies the changes.
Cancel	Closes the form without applying any changes.

Add a Multiple Lookup Expression

1. Determine whether you will be importing or exporting the extracted expression. Select **Open** from the **DataExchange** menu. Select the appropriate configuration and click [Open]. For more information, refer to Open/Close a DataExchange Configuration on page 104.
2. Select **Expressions** from the **DataExchange** menu.
3. The DataExchange Expression form opens. Click [Add].
4. In the **Name** field, type a unique, descriptive name for the expression.
5. In the **Type** drop-down list, select **Multi-Lookup**.
6. Click [Configure].
7. The Multiple Lookup form opens. In the **Lookup table** drop-down list select the table the source data is in.
8. Select the **Return field** from the drop-down list. This is the field of data you want imported/exported.
9. Select the **Source data** from the drop-down list. This is one of the items you want to search or lookup.
10. Select the **Parameter field** from the drop-down list. The parameter field is where, in the lookup table, the source data is located.
11. Click [Add] to add make the source data/parameter field one of the lookup item. To delete an item in the parameter list click the [Delete] button.
12. Repeat steps 9 - 11 for each additional lookup item.
13. Click [OK] to accept the settings.
14. Click [OK] and then [Close] to close the DataExchange Expressions form.
15. Map the fields that the arithmetic expression will be applied to during import/export. For more information, refer to Map Fields in a Configuration - Simple Method on page 84.
16. Save the DataExchange Expression. For more information, refer to Save a DataExchange Configuration on page 86.
17. If you wish to run a DataExchange configuration, refer to Run a DataExchange Configuration on page 87.

Number Conversion Expressions Form



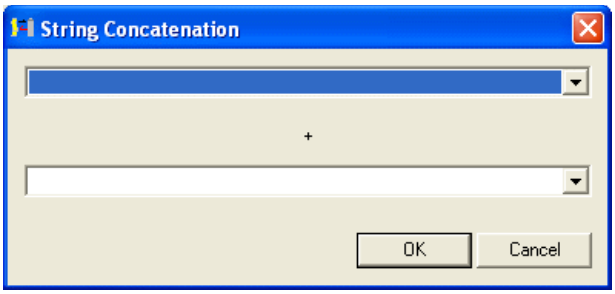
Field	Description
Function	Lists the available number conversions. The first number system listed in the function is the number system of the source data. The second number system listed in the function is the system want you want the source data changed to. The number systems are defined below: *Binary* - base 2 *Decimal* - base 10 *Hexadecimal* - base 16 *Octagonal* - base 8
Source data (number)	Lists numeric data sources. Select the data source you want to convert.
OK	Closes the form and applies the changes.
Cancel	Closes the form without applying any changes.

Add a Number Conversion Expression

1. Determine whether you will be importing or exporting the extracted expression. Select **Open** from the **DataExchange** menu. Select the appropriate configuration and click [Open]. For more information, refer to Open/Close a DataExchange Configuration on page 104.
2. Select **Expressions** from the **DataExchange** menu.
3. The DataExchange Expression form opens. Click [Add].
4. In the **Name** field, type a unique, descriptive name for the expression.
5. In the **Type** drop-down list, select **Number Conversion**.
6. Click [Configure].
7. The Number Conversion form opens. In the **Function** drop-down list select the function you want performed.
8. In the **Source data (number)** drop-down list select a numeric expression.
9. Click [OK] to accept the settings.

10. Click [OK] and then [Close] to close the DataExchange Expression form.
11. Map the fields that the number conversion expression will be applied to during import/export. For more information, refer to Map Fields in a Configuration - Simple Method on page 84.
12. Save the DataExchange Expression. For more information, refer to Save a DataExchange Configuration on page 86.
13. If you wish to run a DataExchange configuration, refer to Run a DataExchange Configuration on page 87.

String Concatenation Expressions Form



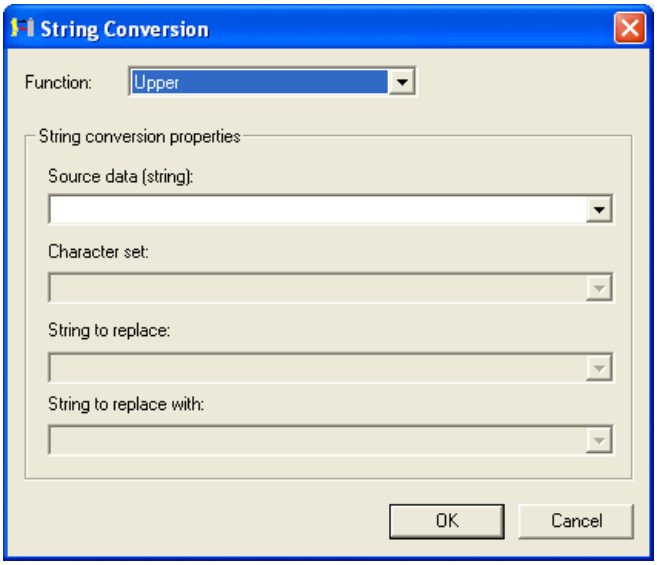
Field	Description
Source data	Lists the first character string to concatenate. A *character string* is a series of characters manipulated as a group. A *character* is any symbol that requires one byte of storage and can be numbers, letters and symbols.
Source data	Lists the second character string to concatenate. A *character string* is a series of characters manipulated as a group. A *character* is any symbol that requires one byte of storage and can be numbers, letters and symbols.
OK	Closes the form and applies the changes.
Cancel	Closes the form without applying any changes.

Add a String Concatenation Expression

1. Determine whether you will be importing or exporting the extracted expression. Select **Open** from the **DataExchange** menu. Select the appropriate configuration and click [Open]. For more information, refer to Open/Close a DataExchange Configuration on page 104.
2. Verify both of the strings you want to concatenate exist. If not determine what type of expression you need to create and refer to the appropriate instructions in this chapter.
3. Select **Expressions** from the **DataExchange** menu.
4. The DataExchange Expression form opens. Click [Add].
5. In the **Name** field, type a unique, descriptive name for the expression.

6. In the **Type** drop-down list, select **String Concatenation**.
7. Click [Configure].
8. The String Concatenation form opens. Select the first and second strings from the corresponding drop-down lists.
9. Click [OK] to accept the settings.
10. Click [OK] and then [Close] to close the DataExchange Expression form.
11. Map the fields that the string concatenation expression will be applied to during import/export. For more information, refer to Map Fields in a Configuration - Simple Method on page 84.
12. Save the DataExchange Expression. For more information, refer to Save a DataExchange Configuration on page 86.
13. If you wish to run a DataExchange configuration, refer to Run a DataExchange Configuration on page 87.

String Conversion Expressions Form



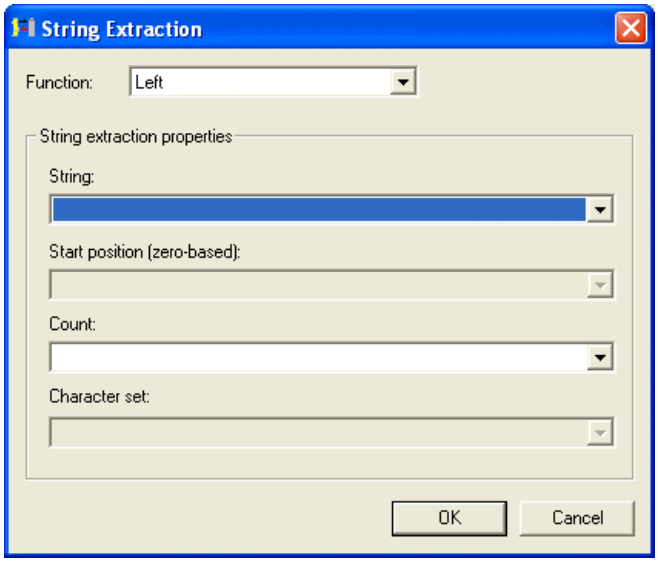
Field	Description
Function	Choices include: **Upper** - converts every letter in the string to uppercase letters. Symbols and numbers are not changed. **Lower** - converts every letter in the string to lowercase letters. Symbols and numbers are not changed. **Reverse** - returns the string in reverse order. For example if the text string is “cabbage” then the value returned is “egabbac”. **Replace -** replaces one string or part of one string with another. For example you can replace all the dashes in a string with blank spaces. **Trim Left** - starts from with the furthest left value and trims/deletes the value if it is found in the character set. The first time a value is not found in the character set, the trim left procedure stops. For example if the text string is “cabbage” and the character set is “aeiou” then the value returned is “cabbage”. **Trim Right** - starts from with the furthest right value and trims/deletes the value if it is found in the character set. The first time a value is not found in the character set, the trim right procedure stops. For example if the text string is “cabbage” and the character set is “aeiou” then the value returned is “cabbag”.
String	Lists the source data. A *string* is a series of characters manipulated as a group. A *character* is any symbol that requires one byte of storage and can be numbers, letters and symbols.
Character set	Lists the *character set* which is a defined list of characters that can represent a number, letter, or symbol. The character set are the characters the string will be compared to when performing a trim left or trim right string conversion. A *character* is any symbol that requires one byte of storage and can be numbers, letters and symbols.
OK	Closes the form and applies the changes.

Field	Description
Cancel	Closes the form without applying any changes.

Add a String Conversion Expression

1. Determine whether you will be importing or exporting the extracted expression. Select **Open** from the **DataExchange** menu. Select the appropriate configuration and click [Open]. For more information, refer to Open/Close a DataExchange Configuration on page 104.
2. Verify any constant expression you may need (to create a character set) is available. To create a constant expression, refer to Add a Constant Expression on page 134.
3. Select **Expressions** from the **DataExchange** menu.
4. The DataExchange Expressions form displays.Click [Add].
5. In the **Name** field, type a unique, descriptive name for the expression.
6. In the **Type** drop-down list, select **String Conversion**.
7. Click [Configure].
8. The String Conversion form opens. Select the type of string conversion you want to perform (Lower, Reverse, Trim Left, Trim Right or Upper) from the Function drop-down list.
9. The fields that must be populated depend on the Function selected. Fields that do not have to be populated will be grayed out. Fill in the active fields with the appropriate constant expressions.
10. Click [OK] to accept the settings.
11. Click [OK] and then [Close] to close the DataExchange Expression form.
12. Map the fields that the string conversion expression will be applied to during import/export. For more information, refer to Map Fields in a Configuration - Simple Method on page 84.
13. Save the DataExchange Expression. For more information, refer to Save a DataExchange Configuration on page 86.
14. If you wish to run a DataExchange configuration, refer to Run a DataExchange Configuration on page 87.

String Extraction Expressions Form



Field	Description
Function	Choices include: **Left** - extracts a defined number of characters starting from the left of the string. For example if the text string is “cabbage” and the Count is “5” then the value returned is “cabba”. **Mid** - extracts every character from a defined starting point to a defined ending point. The starting and ending points are inclusive and the starting point is zero-based. For example if the text string is “cabbage”, the Start position is “3” and the Count is “3” then the value returned is “bag”. **Right** - extracts a defined number of characters starting from the right of the string. For example if the text string is “cabbage” and the Count is “3” then the value returned is “age”. **Span Excluding** - extracts characters in a string from left to right that are NOT found anywhere in the character set. The extraction stops when a character is found that is in both the string and the character set. For example if you have a text string “cabbage” and the character set is “abc” then the value returned is empty. If the text string “cabbage” and the character set is “g” then the value returned is “cabba”. **Span Including** - extracts characters in a string from left to right that are also found anywhere in the character set. For example if you have a text string “cabbage” and the character set is “abc” then the value returned is “cabba”. **Note:** If the count for Left, Mid, or Right extract exceeds the string length then the entire string is extracted (starting at the start position for Mid extractions). **Note:** Return strings may be empty.
String	Contains the source information that you will be extracting from. A *string* is a series of characters manipulated as a group. A *character* is any symbol that requires one byte of storage and can be numbers, letters and symbols.

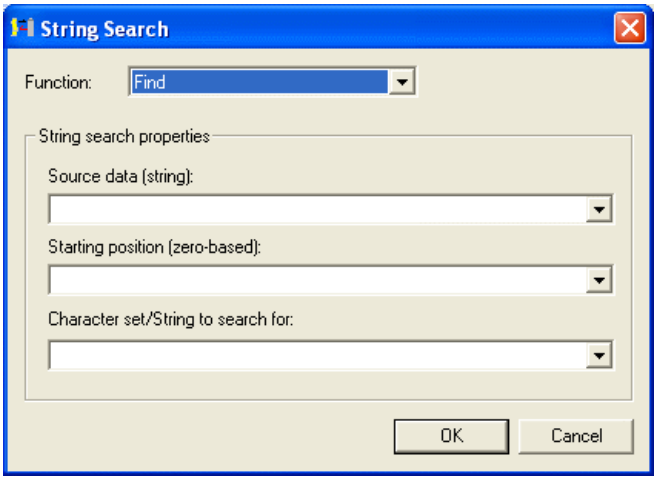
Field	Description
Start position (zero-based)	Identifies where in the string, the extraction begins. This value is typically a constant expression and must be created before you create the extraction expression. For more information, refer to Add a Constant Expression on page 134. **Note:** This field is active for the Mid Function only.
Count	Lists the expression for the number of characters to extract. This value is typically a constant expression and must be created before you create the extraction expression. For more information, refer to Add a Constant Expression on page 134. **Note:** This field is active for the Left, Mid and Right Functions.
Character set	Lists the *character set* which is a defined list of characters. A *character* is any symbol that requires one byte of storage and can be numbers, letters and symbols. The character set are the characters that will be excluded/included during a span excluding or span including string extraction. The character set is typically a constant expression and must be created before you create the extraction expression. For more information, refer to Add a Constant Expression on page 134.
OK	Closes the form and applies the changes.
Cancel	Closes the form without applying any changes.

Add an Extraction Expression

1. Determine whether you will be importing or exporting the extracted expression. Select **Open** from the **DataExchange** menu. Select the appropriate configuration and click [Open]. For more information, refer to Open/Close a DataExchange Configuration on page 104.
2. Verify any constant expression you may need (for the start position, count or character set) is available. To create a constant expression, refer to Add a Constant Expression on page 134.
3. Select **Expressions** from the **DataExchange** menu.
4. The DataExchange Expression form opens. Click [Add].
5. In the **Name** field, type a unique, descriptive name for the expression.
6. In the **Type** drop-down list, select **String Extraction**.
7. Click [Configure].
8. The String Extraction form opens. Select the type of string extraction you want to perform (Left, Right, Mid, Span Excluding or Span Including) from the **Function** drop-down list.
9. The fields that must be populated depend on the Function selected. Fields that do not have to be populated are grayed out. Fill in the active fields with the appropriate expressions.
10. Click [OK] to accept the settings.
11. Click [OK] and then [Close] to close the DataExchange Expression form.
12. Map the fields that the extraction expression will be applied to during import/export. For more information, refer to Map Fields in a Configuration - Simple Method on page 84.

13. Save the DataExchange Expression. For more information, refer to Save a DataExchange Configuration on page 86.
14. If you wish to run a DataExchange configuration, refer to Run a DataExchange Configuration on page 87.

String Search Expressions Form



Field	Description
Function	Choices include: **Find -** finds a character or substring inside a larger string and returns a numeric value (zero-based) identifying where the character is located or where the substring starts **Find One Of -** finds the first character in the string that matches any one of the characters in the Character set and returns a numeric value (zero-based) identifying where the character is located. **Length -** counts the number of characters in a string and returns a numeric value. **Note:** The Find and Find One Of functions are case-sensitive.
String	Contains the source information that you will be searching. A *string* is a series of characters manipulated as a group. A *character* is any symbol that requires one byte of storage and can be numbers, letters and symbols.
Starting position (zero-based)	Identifies where in the string, the search begins. This value is typically a constant expression and must be created before you create the extraction expression. For more information, refer to Add a Constant Expression on page 134. **Note:** This field is active for the Find Function only.

Field	Description
Character set/ String to search for	Lists the character set or string to search. A *character set* is a defined list of characters. A *character* is any symbol that requires one byte of storage and can be numbers, letters and symbols. A *string* is a series of characters manipulated as a group. The character set is typically a constant expression and must be created before you create the search expression. For more information, refer to Add a Constant Expression on page 134. **Note:** This field is active for the Find, Find One Of functions.
OK	Closes the form and applies the changes.
Cancel	Closes the form without applying any changes.

Add a String Search Expression

1. Determine whether you will be importing or exporting the extracted expression. Select **Open** from the **DataExchange** menu. Select the appropriate configuration and click [Open]. For more information, refer to Open/Close a DataExchange Configuration on page 104.
2. Verify any constant expression you may need (for the starting position or character set) is available. To create a constant expression, refer to Add a Constant Expression on page 134.
3. Select **Expressions** from the **DataExchange** menu.
4. The DataExchange Expressions form opens. Click [Add].
5. In the **Name** field, type a unique, descriptive name for the expression.
6. In the **Type** drop-down list, select **String Search**.
7. Click [Configure].
8. The String Search form opens. Select the type of string search you want to perform (Find, Find One Of or Length) from the **Function** drop-down list.
9. The fields that must be populated depend on the Function selected. Fields that do not have to be populated are grayed out. Fill in the active fields with the appropriate expressions.
10. Click [OK] to accept the settings.
11. Click [OK] and then [Close] to close the DataExchange Expression form.
12. Map the fields that the string search expression will be applied to during import/export. For more information, refer to Map Fields in a Configuration - Simple Method on page 84.
13. Save the DataExchange Expression. For more information, refer to Save a DataExchange Configuration on page 86.
14. If you wish to run a DataExchange configuration, refer to Run a DataExchange Configuration on page 87.

Modify any Expression

1. In FormsDesigner, select **Expressions** from the **DataExchange** menu.

2. In the Expression listing window, select the expression you wish to modify.

Note: System expressions cannot be modified, but those that you have created can be.

3. Modify the values you wish to change. Any value except the **Type** can be modified.
4. Click [OK].

Delete an Expression

1. In FormsDesigner, select **Expressions** from the **DataExchange** menu.
2. In the Expression listing window, select the expression you wish to delete.

Note: System expressions cannot be deleted, but those that you have created can be.

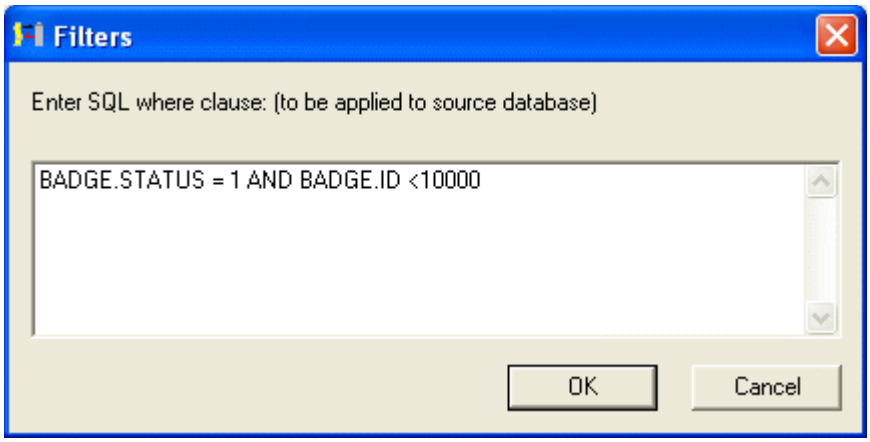
3. Click [Yes] to confirm the deletion. The expression is deleted and removed from the Expression listing window.

Filters Form

The Filters form is displayed by either:

1. Selecting **Filters** from the **DataExchange** menu when a configuration that is open.

2. Clicking the button on the DataExchange Main toolbar when a configuration that has a database as the source is open.



Filters Form

Form element	Comment
Enter SQL where clause	Displays the SQL where clause that will be applied to the source database when the configuration is executed.
OK	Saves the filter specified.
Cancel	Closes the Filter form without modifying the SQL where clause.

Filters Form Procedures

Add a Filter

DataExchange supports filtering incoming data in a database-to-database configuration as well as filtering text or a database to be exported. DataExchange does not support the filtering or imported text.

To enter a filter using a SQL where clause:

1. In FormsDesigner, select **Filters** from the **DataExchange** menu.
2. The Filters form opens. Type a SQL where clause to be applied to the source database. Some rules for entering this statement that must be followed include:
   - Leave out the term 'WHERE.' For example, you might enter the following:

     BADGE.STATUS = 1 AND BADGE.ID < 1000
   - Use fully qualified fields. For example, enter EMP.ID or BADGE.ID instead of only ID.
3. Click [OK].

Appendices

Appendix A: Table Layouts

ACCESSLVL

Field	Type	Size	Required?	Description
ACCESSLVID	number	---	Yes	ID of the access level
ACTIVATE	number	---	No	this field is not used
COMMAND	number	---	No	**Command Authority for Users** check box
DESCRIPT	character	up to 32 characters	No	description of the access level
DOWNLOAD	number	---	No	**Download to Intelligent Readers** check box
ELEVATORLVL	number	---	No	elevator control level
EXPIREDATE	datetime	---	No	this field is not used
SEGMENTID	number	---	No	ID of the segment

BADGE

Field	Type	Size	Required?	Description
ACTIVATE	datetime	---	Yes	badge activation date
APBEXEMPT	Boolean	---	Yes	Anti-Passback **APB Exempt** radio button. 0 = No; 1 = Yes
BADGEKEY	number	---	Yes	ID of the badge, which must be unique
DEACTIVATE	datetime	---	Yes	badge deactivation date
DEADBOLT_OVERRIDE	number	---	No	indicates if the cardholder can override a deadbolt on a mortise series lockset
EMBOSSED	number	---	No	number embossed on card
EMPID	number	---	Yes	ID of the cardholder
EXTEND_STRIKE_HELD	number	---	Yes	Rename of the old VDT field; default is 0
ID	number	---	Yes	ID of the badge; combination of BADGE.ID, BADGE.ISSUECODE, and BADGE.SEGMENTID must be unique
ISSUECODE	number	---	Yes	badge issue code
LASTCHANGED	datetime	---	No	date on which record was last changed
LASTPRINT	datetime	---	No	date on which badge was last printed

BADGE (Continued)

Field	Type	Size	Required?	Description
PASSAGE_MODE	number	---	Yes	indicates if the user can enable passage mode
PINCODE	character	up to 40 characters	No	PIN code for badge
PIN	character	up to 40 characters	No	PIN code for badge; replaces PINCODE
PRINTS	number	---	No	number of times badge has been printed
SEGMENTID	number	---	Yes	ID of the segment
STATUS	number	---	Yes	badge status
TYPE	number	---	Yes	badge type
USELIMIT	number	---	No	

BADGELINK

Field	Type	Size	Required?	Description
ACCLVLID	number	---	Yes	ID of the access level
ACTIVATE	datetime	---	No	badge activation date
BADGEKEY	number	---	Yes	ID of the badge
DEACTIVATE	datetime	---	No	badge deactivation date

BADGETYP

Field	Type	Size	Required?	Description
ID	number	---	Yes	ID of the badge type
NAME	character	up to 64 characters	No	description of the badge type
The remaining fields in this table are for internal use only, and can’t be imported or exported.				

BADGSTAT

Field	Type	Size	Required?	Description
ID	number	---	Yes	ID of the badge status
NAME	character	up to 32 characters	No	description of the badge status

EMP

Field	Type	Size	Required?	Description
ALLOWEDVISITORS	number	---	Yes	indicates whether the cardholder can accept visitors
ASSET_GROUPID	number	---	No	ID of the Asset Group
FIRSTNAME	character	up to 64 characters	No	cardholder's first name
GUARD	number	---	No	indicates that the given employee can be assigned to perform guard tours (1 implies that the guard can perform tours; any other value indicates that they cannot)
ID	number	---	Yes	ID of the cardholder
LASTCHANGED	datetime	---	No	date on which record was last changed
LASTNAME	character	up to 64 characters	Yes	cardholder's last name
MIDNAME	character	up to 32 characters	No	cardholder's middle name
SEGMENTID	number	---	Yes, defaults to -1 if not supplied	Used only if cardholders are segmented, -1 otherwise. Specifies person's primary segment.
SSNO	character	up to 13 characters	No	cardholder's Social Security number
VISITOR	number	---	Yes	Visitor ID from the Visit table

MMOBJS

Field	Type	Size	Required ?	Description
ACCEPTANCETHRESHOLD	number	---	No	This field is only used for biometric templates. This is the acceptance threshold that is used during a biometric verification. The values used for this may vary depending on the type of biometric template.
BIO_BODYPART	number	---	No	This field is only used for biometric templates. This field stores the body part that is associated with the biometric template record stored in this table. This value is used mainly for prompting the user when performing a biometric verification.
				0 = none
				1 = index finger on the right hand
				2 = index finger on the left hand
				3 = middle finger on the right hand
				4 = middle finger on the left hand
				5 = ring finger on the right hand
				6 = ring finger on the left hand
				7 = little finger on the right hand
				8 = little finger on the left hand
				9 = thumb on the right hand
				10 = thumb on the left hand
				11 = unnamed finger
				100 = right hand
				101 = inverted right hand
				102 = left hand
				103 = inverted left hand
EMPID	number	---	Yes	ID of the cardholder
LASTCHANGED	datetime	---	No	date the image was last changed
LNL_BLOB	image	---	No	the actual object data is stored in this field

MMOBJS (Continued)

Field	Type	Size	Required ?	Description
OBJECT	number	---	Yes	0 = none 1 = photo 8 = Signature 32 = Bioscrypt fingerprint 48 = Iridian iris
TYPE	number	---	Yes	0 = image 1 = chromakey mask 2 = thumbnail image 3 = fingerprint template 4 = handprint template 5 = iris image data

The following table lists the default user-defined employee-related fields. Your table may differ from this if you have customized your B.A.S.I.S. database.

UDFEMP

Field	Type	Size	Required?	Description
ADDR1	character	up to 32 characters	No	cardholder's residential address
BDATE	datetime	---	No	cardholder's birth date
BUILDING refer to BUILDING.ID	number	---	No	cardholder's office building
CITY	character	up to 25 characters	No	cardholder's city of residence
DEPT refer to DEPT.ID	number	---	No	ID of cardholder's company department
DIVISION refer to DIVISION.ID	number	---	No	cardholder's company division
EMAIL	character	up to 80 characters	No	(Provided in default cardholder UDF layout.) This is the cardholder's internet e-mail address.
EXT	character	up to 6 characters	No	cardholder's office phone number extension
FLOOR	character	up to 6 characters	No	cardholder's office floor
ID	number	---	No	ID of the cardholder

UDFEMP (Continued)

Field	Type	Size	Required?	Description
LOCATION refer to LOCATION.ID	number	---	No	cardholder's business location
OPHONE	character	up to 15 characters	No	cardholder's office phone number
PHONE	character	up to 15 characters	No	cardholder's home phone number
STATE	character	up to 12 characters	No	cardholder's state of residence
TITLE refer to TITLE.ID	number	---	No	ID of the cardholder's job title
ZIP	character	up to 15 characters	No	cardholder's residential zip code

The following are other tables that are frequently used.

BUILDING

Field	Type	Size	Required?	Description
ID	number	---	Yes	ID of the building
NAME	character	up to 32 characters	Yes	name of the building

DEPT

Field	Type	Size	Required?	Description
ID	number	---	No	ID of the department
NAME	character	up to 60 characters	No	name of the department

DIVISION

Field	Type	Size	Required?	Description
ID	number	---	Yes	ID of the division
NAME	character	up to 32 characters	No	name of the division

TITLE

Field	Type	Size	Required?	Description
ID	number	---	Yes	ID of the title
NAME	character	up to 32 characters	No	name of the title

The following are Asset-related tables:

ASSET

Field	Type	Size	Required?	Description
AQUIREDDATE	datetime	---	No	date asset was acquired
ASSESSEDVALUE	number	---	No	assessed monetary value of the asset
ASSET_SUBTYPEID	number	---	Yes	ID of the Asset Subtype
ASSET_TYPEID	number	---	Yes	ID of the Asset Type
ASSETID	number	---	Yes	ID of the Asset
DEPT	number	---	No	department asset belongs to
DESCRIPTION	image	---	No	(Reserved - always null)
DISABLEASSET	number	---	Yes	indicates whether an asset tag will get disabled if an invalid access is generated for the asset tag 0 = the asset tag won't be disabled 1 = the asset tag will be disabled
LASTCHANGED	datetime	---	No	date asset was last changed
LASTINSPECTED	datetime	---	No	date asset was last inspected
NAME	character	up to 32 characters	No	name of the asset
NEXTINSPECTION	datetime	---	No	date asset will be inspected next
REPLACEDATE	datetime	---	No	date of replacement of the asset
REPLACEMENTVALUE	number	---	No	monetary value to replace the asset
SCANID	character	up to 32 characters	Yes	Scan ID of the Asset
SEGMENTID	number	---	Yes	(Reserved - always -1)
SERIALNO	character	up to 50 characters	No	serial number of the asset

ASSET_ASSIGNMENT

Field	Type	Size	Required?	Description
ASSET_ASSIGNMENTID	number	---	Yes	ID of the Asset Assignment
ASSETID	number	---	Yes	ID of the Asset
ASSIGNED	datetime	---	Yes	date asset was assigned

ASSET_ASSIGNMENT (Continued)

Field	Type	Size	Required?	Description
EMPID	number	---	Yes	ID of the cardholder that the asset is assigned to
UNASSIGNED	datetime	---	No	indicates if the asset is assigned to a cardholder or not

ASSET_MMOBJS

Field	Type	Size	Required?	Description
ASSETID	number	---	Yes	ID of the asset
LNL_BLOB	image	---	No	photograph of the asset
OBJECT	number	---	Yes	(Reserved - always 0)
TYPE	number	---	Yes	(Reserved - always 0)

ASSET_SUBTYPE

Field	Type	Size	Required?	Description
ASSET_SUBTYPEID	number	---	Yes	ID of the Asset Subtype
ASSET_TYPEID	number	---	Yes	ID of the Asset Type it belongs to
NAME	character	up to 32 characters	Yes	name of the Asset Subtype

ASSET_TYPE

Field	Type	Size	Required?	Description
ASSET_TYPEID	number	---	Yes	ID of the Asset Type
NAME	character	up to 32 characters	Yes	name of the Asset Type

The following are Visitor-related tables:

VISIT

Field	Type	Size	Required?	Description
EMPID	number	---	Yes	ID of the employee who is being visited
LASTCHANGED	datetime	---	No	date the visit was last changed
PURPOSE	character	up to 128 characters	No	purpose of the visit

VISIT (Continued)

Field	Type	Size	Required?	Description
SCHEDULED_TIMEIN	date/time	---	No	time a visit is scheduled to begin
SCHEDULED_TIMEOUT	date/time	---	No	time a visit is scheduled to end
TIMEIN	datetime	---	No	visitor's actual arrival time
TIMEOUT	datetime	---	No	visitor's actual departure time
TYPE	number	---	No	type of visit
VISITID	number	---	Yes	ID of the visit
VISITORID	number	---	Yes	ID of the visitor

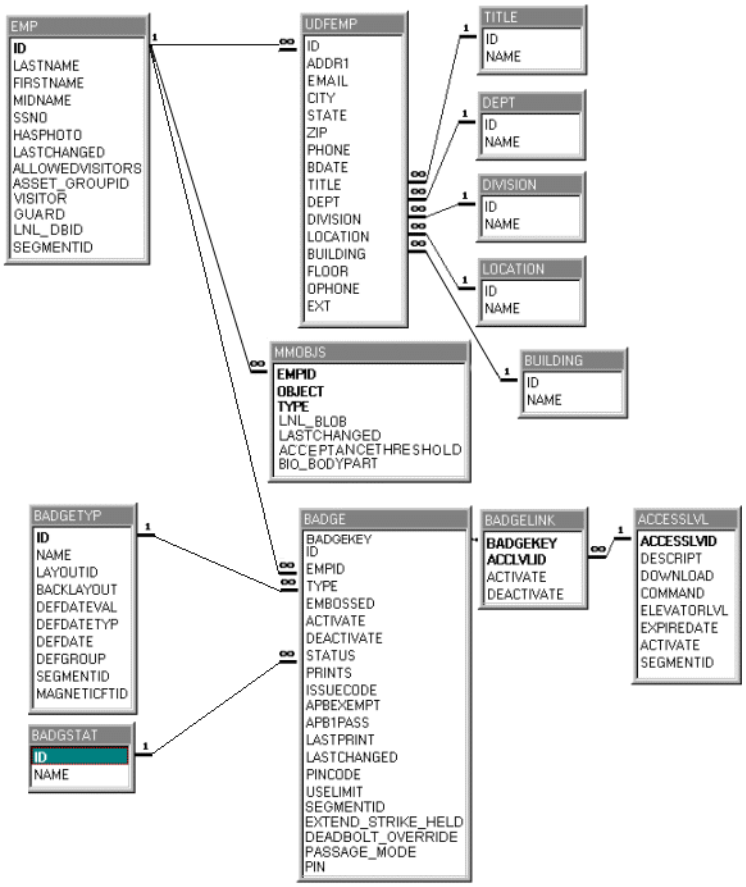
VISIT_TYPE

Field	Type	Size	Required?	Description
ID	number	---	Yes	ID of the visit type
NAME	character	up to 32 characters	No	Name of the visit type

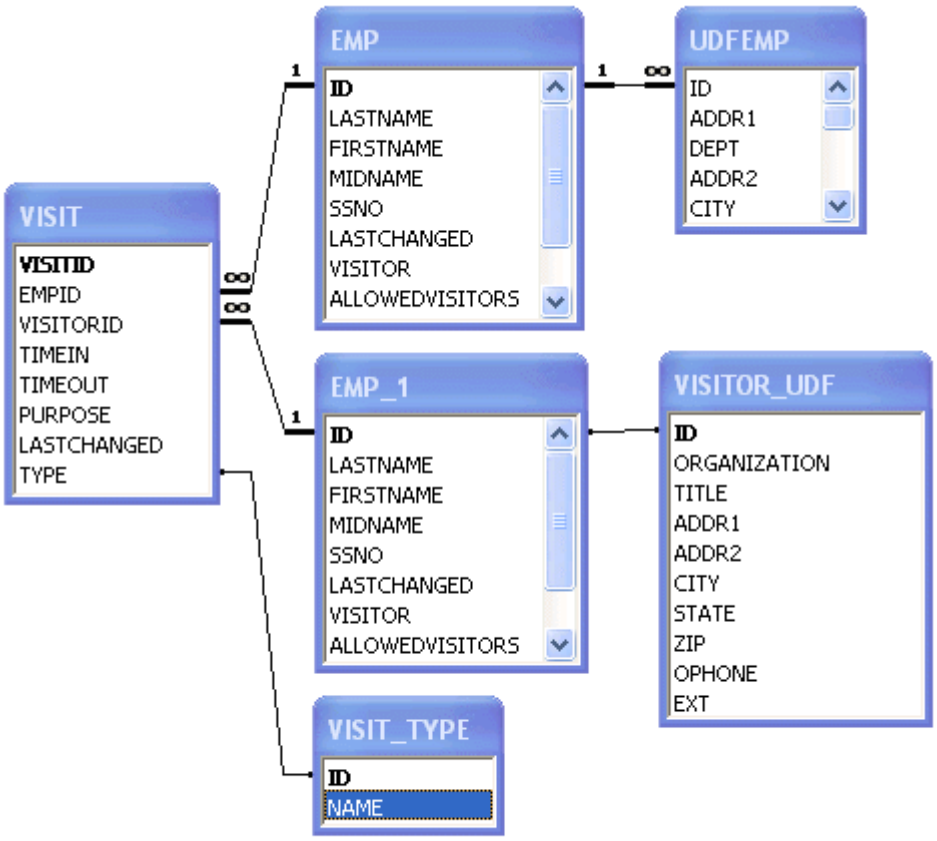
VISITOR_UDF

Field	Type	Size	Required?	Description
ADDRESS	character	up to 32 characters	No	visitor's work address
CITY	character	up to 25 characters	No	city where visitor's organization is located
EXT	character	up to 6 characters	No	visitor's phone extension
ID	number	---	Yes	ID of the visitor
OPHONE	character	up to 15 characters	No	visitor's office phone number
ORGANIZATION	character	up to 64 characters	No	organization visitor is from
STATE	character	up to 12 characters	No	state where visitor's organization is located
TITLE	character	up to 64 characters	No	ID of the visitor's job title
ZIP	character	up to 15 characters	No	zip code of the visitor's organization

Appendix B: Data Relationship Diagrams



In this diagram, EMP_1 is another instance of the EMP table, for visitors (visitors and cardholders share the EMP table as the base table).

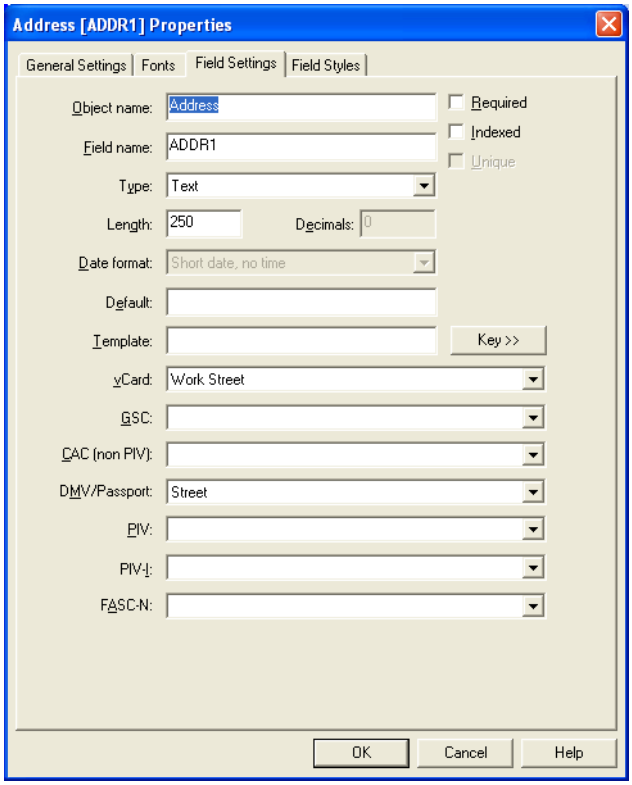


Appendix C: Field Mapping for Enrollment Devices

Using a specialized scanner such as a Corex Business Card scanner, ScanShell 800/1000 terminal, or ID-Check terminal is a quick and easy way to populate Cardholder or Visitor records in the B.A.S.I.S. system. Using one of these devices saves time typing and decreases data entry mistakes.

For the B.A.S.I.S. system to be able to interpret the data from these devices, the B.A.S.I.S. fields must be mapped to the types of data available for each device. Although most of the B.A.S.I.S. fields are pre-mapped, you will need to add a mapping for any new custom fields that you add to the Cardholder or Visitor form.

Mappings are done in FormsDesigner in the Field Properties Folder on the Field Settings form.



- Corex Business Card scanner data is mapped to vCard values
- ScanShell 800/1000 data is mapped to the DMV/Passport values
- ID-Check data is also mapped to the DMV/Passport values

Example: Creating and Mapping a Field

The following example assumes that you already have a card scanner configured and properly working. For information on configuring different enrollment devices, refer to the OEM Device Configuration Guide.

For this example let's assume that you are creating a field for a Fax number. To begin:

1. Make sure that all other B.A.S.I.S. applications are closed, then open FormsDesigner, making sure to select the Cardholder form.
2. From the **Insert** menu, select **Text Field**.
3. Draw the field onto the form. The field's properties window opens, and the Field Settings form is displayed.
    a. Set all typical field settings, such as the name, type, length, etc.
    b. Select the appropriate field for the device you will be using and map it. To do this:
        - For the Corex Business Card scanner: In the **vCard** field, select "Fax".
        - For the ScanShell 800/1000 or ID-Check: In the **DMV/Passport** field, select "Fax".
    c. Click [OK].
4. Add a text label if you wish. To do this:
    a. From the **Insert** menu, select **Label**.
    b. Draw the label on the form.
5. Save the form.

You have now successfully added and mapped a new **Fax** field, and the field is ready for use. To test that the field does indeed appear and function correctly with the device:

1. Log into System Administration.
2. From the **Administration** menu, select **Cardholders**.
3. Click [Add].
4. Click [Import].
5. The Select Import Source window opens. Select the source device you are using.
6. Click [OK].
7. The source device scans the card and fills in the proper fields with the correct information. As long as the card that you scanned contained a fax number, that number will now appear in your new **Fax** field.

Example: Creating and Mapping a Drop-Down List

A drop-down list is different than other fields as there is only a set number of choices that can be selected in the drop-down field. These choices must be created in List Builder in the System Administration application. See the System Administration User Guide on how to add to the list.

For this example we'll create a drop-down list in FormsDesigner that lists the cardholder's gender.

1. Make sure that all other B.A.S.I.S. applications are closed, then open FormsDesigner, making sure to select the Cardholder form.
2. From the **Insert** menu, select **Drop-down list**.
3. Draw the field onto the form. The field's properties window opens, and the Field Settings form is displayed.
   a. Set all typical field settings, such as the name, type, length, etc.
   b. Select the appropriate field for the device you will be using and map it.
   c. Click [OK].
4. Add a text label if you wish. To do this:
   a. From the **Insert** menu, select **Label**.
   b. Draw the label on the form.
5. Save the form.

Now that the **Gender** drop-down list is created it will also show up in the List Builder form in System Administration. See the System Administration User Guide to add the options "Male" and "Female."

Default Field Mappings

The following tables list the default field mappings that are used by various source devices.

Corex Business Card Scanner Default Field Mappings

vCard values must be mapped to the corresponding UDF in order to make import possible.

vCard Field	Cardholder Form Field
Last Name	Last Name
First Name	First Name
Middle Name	Middle Name
Work Street	Address
Work City	City

vCard Field	Cardholder Form Field
Work State	State
Work Zip	Zip Code
Work Telephone	Office Phone
Internet Email	Email
Organization Name	Department
Title	Title

ScanShell 800/1000 Terminal Default Field Mappings

DMV/Passport values must be mapped to the corresponding UDF in order to make import possible.

DMV/Passport Field	Cardholder Form Field
Last Name	Last Name
First Name	First Name
Middle Name	Middle Name
Street	Address
City	City
Jurisdiction of Residence	State
Zip Code	Zip Code

ID-Check Terminal Default Field Mappings

The DMV/Passport values must be mapped to the corresponding UDF in order to make import possible.

DMV/Passport Field	Cardholder Form Field
Last Name	Last Name
First Name	First Name
Middle Name	Middle Name
Street	Address
City	City
Jurisdiction of Residence	State
Zip Code	Zip Code

GSC Field Mappings

Note: If you are using an Axalto Reflex USB PC/SC Encoder/Scanner then you will need to map the cardholder's data to the GSC format.

GSC Field	Cardholder Form Field
Last Name	Last Name
First Name	First Name
Middle Name	Middle Name
Position/Title	Title
Date of Birth	Birth date
Office Phone	Office phone
Office Address 1	Address
Office City	City
Office State	State
Office Zip	Zip Code

CAC (Non-PIV) and FASC-N Field Mappings

Contact your System Administrator for details on the different field settings for the CAC (non PIV) and FASC-N card type.

PIV, PIV-I, and FASC-N Field Mappings

PIV (Personal Identity Verification) and *PIV-I* (Personal Identity Verification Interoperable) card values must be mapped to the corresponding cardholder UDF fields in order to make import possible.

Note: FormsDesigner provides **PIV**, **PIV-I**, and **FASC-N** drop-down fields for mapping the information found on PIV/PIV-I cards. The contents of the **FASC-N** field are broken into sub-fields for mapping purposes.

The PIV drop-down is used to map the fields on the form for PIV, TWIC, or CAC EP cards. This field cannot be used at the same time as the FASC-N field since PIV, TWIC, and CAC cards import the FASC-N.

If using the PIV-I format, use the PIV-I drop-down to map the fields on the form. This field can be mapped along with the PIV or FASC-N fields to support PIV, TWIC, CAC EP, and PIV-I cards at the same time.

The FASC-N drop-down is used to map the fields on the form to import data from cards such as PIV, TWIC, or CAC EP.

Suggested PIV, PIV-I, and FASC-N field mapping

PIV Field	Cardholder Form Field
Last Name	Last Name
First Name	First Name
Middle Initial	Middle Name
Card Expiration Date	Deactivate (Date)

PIV-I Field	Cardholder Form Field
Last Name	Last Name
First Name	First Name
Middle Initial	Middle Name
Card Expiration Date	Deactivate (Date)
GUID (7-Byte)	Badge ID

FASC-N Field	Cardholder Form Field
AC + SC + CN	Badge ID
Individual Credential Issue # (ICI)	Issue code

FASC-N Options

Some of the FASC-N data can be concatenated to form the badge ID:

- **AC + SC + CN.** Agency Code + System Code + Credential Number
- **AC + SC + CN + CS.** Agency Code + System Code + Credential Number + Credential Series
- **AC + SC + CN + CS + ICI.** Agency Code + System Code + Credential Number + Credential Series + Individual Credential Issue
- **AC + SC + CN + ICI.** Agency Code + System Code + Credential Number + Individual Credential Issue

TWIC Field Mappings

TWIC (Transportation Worker Identification Credential) card values must be mapped to the corresponding cardholder UDF fields in order to make import possible. Because TWIC cards contain both TWIC and PIV data, you can use either a TWIC or PIV import source to import the data. If you use a TWIC import source, the PIV data is imported along with the TWIC Privacy Key and the full FASC-N data. However, if you use a PIV import source, only the PIV data is imported.

A PIN is required to import the following PIV data fields:

- Fingerprints

- Facial image
- Printed information

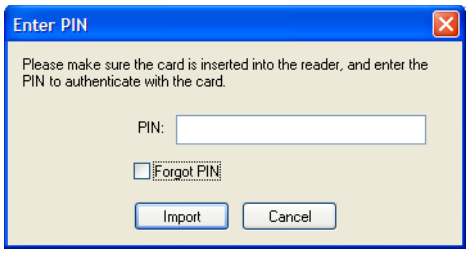
Without a PIN, only these PIV data fields will be imported:

- FASC-N
- GUID
- Card Expiration Date

The TWIC data does not require a PIN. It is imported into the database for hardware integration use and is not visible to the user.

To import the data from a TWIC card, complete the following steps:

1. Insert the TWIC card into a PC/SC reader. The Enter PIN window will be displayed.


Enter PIN
Please make sure the card is inserted into the reader, and enter the PIN to authenticate with the card.
PIN:
Forgot PIN
Import
Cancel

2. Enter the PIN number in the **PIN** field.
3. If you do not remember the PIN, select the **Forgot PIN** check box.
4. Click [Import].

Note: FormsDesigner provides **PIV** and **FASC-N** drop-down fields for mapping the information found on TWIC cards. The contents of the **FASC-N** field are broken into sub-fields for mapping purposes.

Suggested TWIC field mapping

PIV Field	Cardholder Form Field
Last Name	Last Name
First Name	First Name
Middle Initial	Middle Name
Card Expiration Date	Deactivate (Date)

Note: If a card value does not map directly to an existing cardholder UDF field, you can insert a custom UDF field, configuring its properties to the characteristics of the data to be imported.

Full FASC-N (Hexadecimal)

The "Full FASC-N (Hexadecimal)" is provided as a field in the **FASC-N** drop-down to map to the full *FASC-N* (Federal Agency Smart Credential Number) data contained on TWIC and PIV cards. The full FASC-N is a 50-character, hexadecimal string that represents the 25 packed bytes of data used for the entire FASC-N. This value is represented in the same format as the information in the TWIC Revocation Hot List making it possible to export the full FASC-N or use it for external comparison.

TWIC Privacy Key

The TWIC Privacy Key is imported into the database along with the full FASC-N, and can only be imported using a TWIC import source.

Important: When the TWIC import occurs, if no badge type is selected, then the TWIC Privacy Key will NOT be imported into the database. The privacy key only gets imported when a badge exists.

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6161 East 75th Street
Indianapolis, IN 46250
Phone: (317) 849-2250

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